

A Systematic Enumeration of Japanese *Salix* (Salicaceae)

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A systematic enumeration of the genus *Salix* of Japan is provided. *Chosenia* and *Toisusu* are included in *Salix*. About 40 species have been recognized as distinct in recent floras of Japan, but they were reduced to 31 species in this work. Of these, 28 are recognized as native to Japan and three are supposedly imported from China or Korea. These are classified into four subgenera and 17 sections. Subgenus *Urbaniana* (Seemen) H. Ohashi is newly proposed. Thirty-seven natural hybrids are recognized. Four subspecies, one variety, ten forms and one nothosubspecies are newly proposed. They are indicated in a systematic list in this paper. Each taxon is enumerated with its original reference, selected bibliography and principal synonyms. Types of specific and infraspecific names are quoted after the original reference. Areas of distribution are shown for species and infraspecific taxa.

Key words: Bibliography, enumeration, Japan, *Salix*, taxonomy

Introduction

Salix comprises some 400 (Newsholme 1992, Ohashi 1995) or 450 species (Argus 1997). Within the genus, *Chosenia* and/or *Toisusu* are often treated as distinct. In this paper, the broadest concept of *Salix* is adopted on the basis of morphological studies of the three genera (Kimura 1988) and molecular analysis of Salicaceae (Leskinen and Alström-Rapaport 1999, Azuma et al. in press).

Salix is distributed mostly in cold and temperate regions in Northern Hemisphere and a few species extending to South America and Africa. The species are rich in East Asia, especially in China. According to Argus (1997), there are about 270 species in China, 120 in the former Soviet Union, 103 in North America and 65 in Europe.

About 40 species with 30 hybrids are recognized in Japan in recent works (Ohwi 1953, 1965a & b; Kitamura and Murata

1979; Kimura 1989 and Ohwi and Kitagawa 1992), but they were reduced to 31 species with 37 hybrids in this work. These are newly classified into four subgenera and 17 sections. A new subgenus, *Urbaniana* (Seemen) H. Ohashi, is proposed for accommodating *Chosenia*, *Toisusu* and *Salix* subgenus *Protitea* in the system of Kimura (1928, 1938, 1989) and Kitamura and Murata (1979); *Chosenia* and *Salix* sections *Glandulosae* and *Urbaniana* in Nakai (1930); *Chosenia* and *Salix* sections *Tetraspermae* and *Wilsonianae* in Chou (1984); *Chosenia* and *Salix* sections *Floridanae* and *Humboldtianae* in Argus (1997); or subgenera *Pleuradenia* and *Protitea* in Kimura (1988). The subgenus contains all species having the bud scale with a free and imbricate margin and short or absent nectaries. Subgen. *Urbaniana* is the most primitive group of *Salix*.

Salix does not occur naturally in the

Ryukyu Islands (Hatusima 1971, Shimabuku 1997), although Walker (1976) recorded *Salix integra* from Okinawa Island as a native. Kagoshima Prefecture is generally regarded to be the southernmost boundary of *Salix* in Japan for its natural distribution. Among seven species and two hybrids recorded in this Prefecture, *Salix eriocarpa* known in Yakushima, Tanegashima and Amami-oshima (cultivated?) and *S. sieboldiana* in Tanegashima (Hatusima 1978) grow in the southernmost places in Japan.

Since the comprehensive taxonomic work by Seemen in 1903, a number of studies have been made on the Japanese *Salix*. Especially, Koidzumi (1913), Kimura (1926, 1934, 1981, 1988, etc.), Nakai (1930), and Kitagawa (1939, 1979) made great contributions to the genus of Japan, Korea, Manchuria, Kuril Islands and Sakhalin. Recent works on Japanese *Salix* have treated the taxa occurring in present-day Japan (Ohwi 1953, 1965a, 1965b, Kitamura and Murata 1979, Kimura 1989, Ohwi and Kitagawa 1992); *Chosenia* and *Toisusu* are recognized as distinct. These works, however, lack any citation of taxonomic references or bibliography for the taxa, detailed synonymy and citation of the types of the names.

Infrageneric system for the Japanese *Salix* is incomplete. Seemen (1903) and Schneider (1916) founded system for Japanese *Salix*. Recent systematic works and nomenclature of *Salix* are greatly advanced by Skvortsov (1968a, 1968b) and Argus (1986, 1997). Kimura (1928, 1938, 1988) proposed a system of Salicaceae, but did only subgeneric system for *Salix* without any references to works of Skvortsov (1968a, 1968b) and Argus (1986). Kitamura and Murata (1979) merely quoted sectional names in a key to the species of Japanese *Salix* in their Flora of Japanese Woody Plants. It lacks any citation of synonymy and references for the sections and their infrageneric taxa are

hardly comparable with those of Skvortsov (1968a, 1968b) or Argus (1986, 1997).

Many hybrids have been recorded mainly by Kimura in Japanese *Salix*, but these have not been treated systematically. Only names were cited in Floras of Japan (Ohwi 1953, 1965a, 1965b, Kitamura and Murata 1979, Ohwi and Kitagawa 1992). Any citations of references for hybrids of the Japanese *Salix* in the Floras have not been made.

The importance of citation of taxonomic references was emphasized in my previous paper on genera of Japanese Leguminosae (Ohashi 1999). Generally, I believe this is true for every taxon in biology. Citation of selected taxonomic references for a given taxon is important for correct understanding, because present-day knowledge of a taxon is constructed mostly by the accumulation of knowledge since it was first described. Usually, taxa are not fully recognized when they are initially circumscribed; various characteristics are added by later students of the group. Additions or revisions are made not only in gross morphological characters but also in various cryptic characters such as chromosomes, pollen, chemical components, DNA sequences, etc. Naturally, moreover, discovery of future new characteristics are to be expected for a given taxon. Accumulation of characteristics is necessary for full recognition of a taxon, and citation of taxonomic references contributes important information to its true understanding.

I believe that citation of synonyms for a correct name has a role similar in importance to the citation of selected taxonomic references. In this paper each synonym is listed with its references and the type under the correct name.

This paper is intended to provide a basic systematic information for Japanese *Salix* accumulated to date and my opinions on the taxa examined.

Systematic list of Japanese *Salix* with the Japanese name

(New names in boldface)

*Cultivated plants

Fam. Salicaceae Mirb. ヤナギ科

Subfam. Salicoideae Kimura ヤナギ亜科

Gen. *Salix* L. ヤナギ属

I. Subgen. **Urbanianae** (Seemen)

H.Ohashi トカチヤナギ亜属

I-i. Sect. *Chosenia* (Nakai) Kimura

ケショウヤナギ節

1. *Salix arbutifolia* Pall. ケショウヤナギ

I-ii. Sect. *Urbanianae* (Seemen)

C.K.Schneid. トカチヤナギ節

2. *Salix cardiophylla* Trautv. & Mey. トカチヤナギ

2-1. var. *cardiophylla*

2-2. var. *urbaniana* (Seemen) Kudo オオバヤナギ

I-iii. Sect. *Glandulosae* Kimura

マルバヤナギ節

3. *Salix chaenomeloides* Kimura マルバヤナギ

II. Subgen. *Chamaetia* (Dumortier) Nasarov
エゾマメヤナギ亜属

II-i. Sect. *Herbella* Seringe

エゾマメヤナギ節

4. *Salix nummularia* Andersson エゾマメヤナギ

4-1. f. *nummularia*

4-2. f. ***hebecarpa*** (Kimura) H.Ohashi キヌゲエゾマメヤナギ

II-ii. Sect. *Myrtilloides* (Borrer) Andersson
ミヤマヤチヤナギ節

5. *Salix fuscescens* Andersson ミヤマヤチヤナギ

II-iii. Sect. *Glaucae* (Fries) Andersson

タカネイワヤナギ節

6. *Salix nakamura* Koidz. タカネイワヤナギ

6-1. subsp. *nakamura*

6-1-1. f. *nakamura*

6-1-2. f. *eriocarpa* (Kimura) T.Shimizu ケタカネイワヤナギ

6-2. subsp. ***kurilensis*** (Koidz.) H.Ohashi ヒダカミネヤナギ

6-3. subsp. ***yezoalpina*** (Koidz.) H.Ohashi エゾタカネヤナギ

6-3-1. f. ***yezoalpina*** (Koidz.) H.Ohashi

6-3-2. f. *neoreticulata* (Nakai) H.Ohashi イヌマルバヤナギ

III. Subgen. *Salix* ヤナギ亜属

III-i. Sect. *Triandrae* Dumortier

タチヤナギ節

7. *Salix triandra* L. タチヤナギ

III-ii. Sect. *Subalbae* Koidz.

シダレヤナギ節

8. **Salix babylonica* L.

8-1. *f. *babylonica* シダレヤナギ

8-2. *f. *rokkaku* Kimura ロッカクヤナギ

8-3. *f. *seiko* Kimura セイコヤナギ

9. **Salix matsudana* Koidz. var. *tortuosa*
Vilm. ウンリウヤナギ

10. *Salix eriocarpa* Franch. & Sav. ジャヤナギ

11. *Salix pierotii* Miq. オオタチヤナギ

11-1. f. *pierotii*

11-2. *f. *auricoma* Kimura コガネヤナギ

12. *Salix yoshinoi* Koidz. ヨシノヤナギ

13. *Salix jessoensis* Seemen シロヤナギ

13-1. subsp. *jessoensis*

13-2. subsp. ***serissaefolia*** (Kimura)
H.Ohashi コゴメヤナギ

IV. Subgen. *Vetrix* バッコヤナギ亜属

IV-i. Sect. *Hastatae* (Fries) A.Kerner

シバヤナギ節

14. *Salix japonica* Thunb. シバヤナギ

15. *Salix shiraii* Seemen シライヤナギ

16. *Salix rupifraga* Koidz. コマイワヤナギ

16-1. f. *rupifraga*

16-2. f. ***eriocarpa*** (Kimura) Kimura ex
H.Ohashi ケコマイワヤナギ

IV-ii. Sect. *Sieboldianae* C.K.Schneid.

ヤマヤナギ節

17. *Salix sieboldiana* Blume ヤマヤナギ

18. *Salix reinii* Seemen ミネヤナギ

18-1. f. *reinii*

18-2. f. *pendula* Kimura シダレミネヤナギ

IV-iii. Sect. *Helix* Dumortier

コリヤナギ節

19. *Salix miyabeana* Seemen エゾノカワヤナギ

- 19-1. subsp. *miyabeana*
 19-2. subsp. *gilgiana* (Seemen) H.Ohashi カ
 ワヤナギ
 19-2-1. f. *gilgiana* (Seemen) H.Ohashi
 19-2-2. f. *pendula* (Kimura) H.Ohashi シダ
 レカワヤナギ
 20. *Salix integra* Thunb. イヌコリヤナギ
 20-1. f. *integra*
 20-2. f. *pendula* Kimura シダレイヌコリヤ
 ナギ
 21. **Salix koriyanagi* Kimura ex Goerz コ
 リヤナギ
 IV-iv. Sect. Incubaceae A.Kerner
 ノヤナギ節
 22. *Salix subopposita* Miq. ノヤナギ
 IV-v. Sect. Subvinales C.K.Schneid.
 ネコヤナギ節
 23. *Salix gracilistyla* Miq. ネコヤナギ
 23-1. var. *gracilistyla*
 23-1-1. f. *gracilistyla*
 23-1-2. f. *adscendens* (Kimura) H.Ohashi
 タチネコヤナギ
 23-1-3. f. *pendula* (Kimura) H.Ohashi シダ
 レネコヤナギ
 23-1-4. f. *variegata* (Kimura) Kimura フイ
 リネコヤナギ
 23-2. var. *graciliglans* (Nakai) H.Ohashi
 チョウセンネコヤナギ
 23-3. *var. *melanostachys* (Makino)
 C.K.Schneid. クロヤナギ
 IV-vi. Sect. Hukaoana Kimura
 ユビソヤナギ節
 24. *Salix hukaoana* Kimura ユビソヤナギ
 IV-vii. Sect. Daphnella Seringe
 エゾヤナギ節
 25. *Salix rorida* Lacksch. エゾヤナギ
 25-1. f. *rorida*
 25-2. f. *pendula* Kimura シダレエゾヤナギ
 25-3. f. *roridaeformis* (Nakai) Kimura ex
 H.Ohashi コエゾヤナギ
 IV-viii. Sect. Viminella Seringe
 キヌヤナギ節
 26. *Salix schwerinii* E. Wolf キヌヤナギ
 27. *Salix udensis* Trautv. & Mey. オノエヤ
 ナギ

IV-ix. Sect. Cinerella Seringe

バッコヤナギ節

28. *Salix taraiakensis* Kimura タライカヤナ
 ギ
 29. *Salix caprea* L. バッコヤナギ
 30. *Salix futura* Seemen オオキツネヤナギ
 30-1. f. *futura*
 30-2. f. *rufa* (Kimura) H.Ohashi アカゲオ
 オキツネヤナギ
 31. *Salix vulpina* Andersson キツネヤナギ

Putative natural hybrids

(in alphabetical order)

- H1. *Salix* × *algista* C.K.Schneid. トウゲヤ
 ナギ
 H2. *Salix* × *ampherista* C.K.Schneid. ハコ
 ダテヤナギ
 H3. *Salix* × *arakiana* Koidz. ナガバノネコ
 ヤナギ
 H4. *Salix caprea* L. × *S. futura* Seemen
 H5. *Salix* × *cremnophylla* Kimura ネコシバ
 ヤナギ
 H6. *Salix* × *eriocataphylla* Kimura シグレ
 ヤナギ
 H7. *Salix* × *eriocataphylloides* Kimura ナス
 ノシグレヤナギ
 H8. *Salix* × *euerata* Kimura カワオノエヤ
 ナギ
 H9. *Salix futura* Seemen × *S. udensis*
 Trautv. & Mey.
 H10. *Salix* × *gracilistylodes* Kimura ロッコ
 ウヤナギ
 H11. *Salix* × *hapala* Kimura カワイヌコリ
 ヤナギ
 H12. *Salix* × *hatusimai* Kimura チクゼンヤ
 ナギ
 H13. *Salix* × *hayatana* Kimura リュウゾウ
 ジヤナギ
 H14. *Salix* × *hiraoana* Kimura ヒラオヤナ
 ギ
 H15. *Salix* × *hisauchiana* Koidz. フジヤナ
 ギ
 H16. *Salix* × *ikenoana* Kimura イケノヤナ
 ギ
 H17. *Salix integra* Thunb. × *S. miyabeana*
 Seemen

- H18. *Salix* × *iwahisana* Kimura イワヒサヤナギ
 H19. *Salix* × *kamikotica* Kimura カミコウチヤナギ
 H20. *Salix* × *kawamurae* Kimura ミヨウジンヤナギ
 H21. *Salix* × *koidzumii* Kimura トヨハラヤナギ
 H22. *Salix* × *koiei* Kimura コイエヤナギ
 H23. *Salix* × *lasiogyne* Seemen シロシダレヤナギ
 H.23-1. *Salix* × *lasiogyne* nothosubsp. *lasiogyne*
 H.23-2. *Salix* × *lasiogyne* nothosubsp. *yuhkii* (Kimura) H. Ohashi ユウキシダレ
 H24. *Salix* × *leucopithecia* Kimura フリソデヤナギ
 H25. *Salix* × *matsumurae* Seemen オクヤマサルコ
 H26. *Salix* × *microstemon* Kimura ワケノカワヤナギ
 H27. *Salix* × *nasuensis* Kimura ナスノイワヤナギ
 H28. *Salix* × *pedionoma* Kimura バッコキシヤナギ
 H29. *Salix* × *pseudopaludicola* Kimura オオミヤマヤチヤナギ
 H30. *Salix* × *sendaica* Kimura センダイヤナギ
 H31. *Salix* × *sigemitui* Kimura フカオヤナギ
 H32. *Salix* × *sirakawensis* Kimura コセキヤナギ
 H33. *Salix* × *sugayana* Kimura スガヤナギ
 H34. *Salix* × *sumiyosensis* Kimura スミヨシヤナギ
 H35. *Salix* × *thaymasta* Kimura ミヤコヤナギ
 H36. *Salix* × *turumatii* Kimura ヒタチヤナギ
 H37. **Salix* × *japopina* Kimura シバキツネヤナギ

Systematic enumeration of Japanese *Salix*

Fam. *Salicaceae* Mirb., *Elém. Physiol. Vég. Bot.* **2**: 905 (1815). **Type.** *Salix* L.

Subfam. *Salicoideae* Kimura in *Bot. Mag. Tokyo* **42**: 290 (1928); Kimura in *Sci. Rep. Tohoku Imp. Univ.* 4 ser. (Biol.) **13**: 391 (1938). **Type.** *Salix* L.

Gen. *Salix* L.

Salix L., *Sp. Pl.*: 1015 (1753) & *Gen. Pl.* ed. 5, 447 (1754); Thunb., *Fl. Japon.*: 24 (1784); Andersson in DC., *Prodr.* **16** (2): 191 (1868); Franch. & Sav., *Enum. Pl. Jap.* **1**: 458 (1875) & **2**: 502 (1878); Pax in Engler & Prantl, *Nat. Pflanzenfam.* **3**, **1**: 36 (1887); Seemen in *Bot. Jahrb.* **21**: Beibl. **52**: 6 (1896) & *Salic. Jap.*: 1 (1903); C. K. Schneid., *Illust. Handb. Laubh.* **1**: 2 (1904) & in Sarg., *Pl. Wils.* **3**: 40 (1916); Koidz. in *Bot. Mag. Tokyo* **27**: 87 & 264 (1913); Kimura in *Bot. Mag. Tokyo* **40**: 7 (1926) & **42**: 290 (1928); Nakai in *Bull. Soc. Dendr. Fr.* no. **66**: 6 (1928) & *Fl. Sylv. Korea.* **18**: 65 (1930); Makino & Nemoto, *Nippon-Shokubutsu-Soran* 2nd ed.: 161 (1931); Nemoto, *Nippon-Shokubutsu-Soran-Hoi*: 105 (1936); Kimura in *Sci. Rep. Tohoku Imp. Univ.* 4 ser. (Biol.) **13**: 393 (1938); Rehder, *Man. Cult. Tr. Shr.* ed. 2: 82 (1940); Ohwi, *Fl. Jap.*: 398 (1953), *Fl. Jap.* ed. Engl.: 362 (1965) & *Fl. Jap.* ed. rev.: 465 (1965); Hutch., *Gen. Fl. Pl.* **2**: 118 (1967); Skvortsov, *Willows USSR*: 92 (1968); Dorn in *Can. J. Bot.* **54**: 2774 (1976); Kitam. & Murata, *Col. Illust. Wood. Pl. Jap.* **2**: 304 (1979); Kitag., *Neo-Lineam. Fl. Mansh.*: 204 (1979); Chou in *Fl. Reipub. Pop. Sin.* **20** (2): 81 (1984); Kimura in *Sci. Rep. Tohoku Univ.* 4 ser. (Biol.) **39**: 143 & 147 (1988); Ohwi & Kitag., *New Fl. Jap.*: 530 (1992); Newsholme, *Willows*: 22 (1992); Sohma in *Sci. Rep. Tohoku Univ.* 4 ser. (Biol.) **40**: 77 (1993) [pollen]; Nedoluzhko in Charkevich, *Pl. Vascul. Ori. Extr. Soviet.*

7: 158 (1995); Lee, Lineam. Fl. Korea.: 139 (1996); Argus in Syst. Bot. Monog. **52**: 48 (1997). **Type**: *Salix alba* L.

Chosenia Nakai* in Bot. Mag. Tokyo **34**: 67 (1920) & Fl. Sylv. Kor. **18**: 58 (1930); Kimura in Bot. Mag. Tokyo **42**: 290 (1928), sub Salicoideae tribe Chosenieae; Rehder, Man. Cult. Tr. Shr. ed. 2: 82 (1940); Ohwi, Fl. Jap.: 397 (1953); Ohwi, Fl. Jap. ed. Engl.: 362 (1965) & Fl. Jap. ed. rev.: 464 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 336 (1979); Kitag., Neo-Lineam. Fl. Mansh.: 201 (1979); Chou in Fl. Reipubl. Popul. Sin. **20** (2): 79 (1984); Kimura in Wild Flow. Jap. Wood. **1**: 34 (1989); Ohwi & Kitag., New Fl. Jap.: 529 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 172 (1993); Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. **7**: 155 (1995); Lee, Lineam. Fl. Korea.: 135 (1996); Argus in Syst. Bot. Monog. **52**: 13 (1997). **Type**: *Chosenia arbutifolia* (Pall.) Skvortsov (= *Salix arbutifolia* Pall., *Salix splendida* Nakai, *Chosenia splendida* (Nakai) Nakai).

Toisusu Kimura in Bot. Mag. Tokyo **42**: 288 (1928), sub Salicoideae tribe Saliceae; Ohwi, Fl. Jap.: 397 (1953); Ohwi, Fl. Jap. ed. Engl.: 362 (1965) & Fl. Jap. ed. rev.: 464 (1965); Kitam. in Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 335 (1979); Ohwi & Kitag., New Fl. Jap.: 529 (1992); Kimura in Wild Flow. Jap. Wood. **1**: 34 (1989); Zhang in Bull. Bot. Research **14**: 304 (1994); Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. **7**: 155 (1995). **Type**: *Toisusu cardiophylla* (Trautv. & Mey.) Kimura (= *Salix cardiophylla* Trautv. & Mey.).

× *Toisochosenia* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **11**: 247 (1936); Kitam. & Murata, Col. Illust. Wood. Jap. **2**: 337 (1979). **Type**: × *Toisochosenia kamikotica* (Kimura) Kimura (= *Salix kamikotica* Kimura).

*Note: *Chosenia* was considered as inter-

mediate between *Populus* and *Salix* and has been placed at the root of *Salix* (Nakai 1920, Kimura 1928, 1989, Chou 1984, Argus 1997). However, occurrence of a form with rudimentary nectaries emphasized by Kimura (1988) may suggest that *Chosenia* was derived from a species of *Salix* by loss of nectaries. The results of chloroplast DNA studies of *Salix*, *Chosenia* and *Toisusu* by Azuma et al. (1999 in press) did not support the distinct status of *Chosenia* and *Toisusu*. I treat *Chosenia*, therefore, as congeneric with *Salix*.

I. Subgen. *Urbanianae* (Seemen)

H. Ohashi

Salix subgen. *Urbanianae* (Seemen) H. Ohashi, stat. nov. **Type**: *Salix cardiophylla* Trautv. & Mey. (= *S. urbaniana* Seemen).

Salix subgen. *Pleuradenia* Kimura in Bot. Mag. Tokyo **41**: 498 (1927), as “*Pleura-deniae*” & in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **39**: 143 (1988). **Type**: *Salix urbaniana* Seemen.

Salix subgen. *Protitea* Kimura in Bot. Mag. Tokyo **42**: 290 (1928 May) & in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 393 (1938); Dorn in Can. J. Bot. **54**: 2774 (1976); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **39**: 147 (1988). **Type**: *Salix glandulosa* Seemen (= *S. chaenomeloides* Kimura).

Salix subgen. *Pleiolepis* Nakai in Bull. Soc. Dendrol. Fr. **66**: 42 (1928 Aug.). **Type**: *Salix glandulosa* Seemen (Lectotype designated by Argus 1997).

Salix subgen. *Salix*, p.p.: Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 63 (1968) & Willows USSR: 97 (1968), p.p. incl. sect. *Humboldianae* & *Urbanianae*; Dorn in Canad. J. Bot. **54**: 2774 (1976), p.p. incl. subgen. *Pleiolepis* & *Protitea*; Chou in Fl. Reipubl. Pop. Sin. **20** (2): 99 (1984), p.p., incl. sect. *Tetraspermae* & *Wilsonianae*; Argus in Syst. Bot. Monogr. **52**: 50 (1997),

p.p., incl. sect. Floridanae & Humboldiana.

I-i. Sect. **Chosenia** (Nakai) Kimura

Salix sect. **Chosenia** (Nakai) [Flod. in Arkiv Bot. **25A**: 2 (1933), comb. nud.] Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **39**: 145 (1988).

Chosenia Nakai in Bot. Mag. Tokyo **34**: 67 (1920).

Salix sect. *Pentandrae* Dum. ex C.K.Schneid. in Sarg., Pl. Wils. **3**: 98 (1916), p.p.

1. **Salix arbutifolia** Pall., Fl. Ross. **1** (2): 79 (1788).

Salix eucalyptoides Mey. ex C.K.Schneid. in Sarg., Pl. Wils. **3**: 99 (1916).

Salix bracteosa Turcz. ex Trautv. in Middend. Reise Sibir. **1** (2): 77 (1856).

Salix splendida Nakai in Bot. Mag. Tokyo **32**: 215 (1918).

Chosenia splendida (Nakai) Nakai in Bot. Mag. Tokyo **34**: 67 (1920).

Chosenia eucalyptoides (C.K.Schneid.) Nakai in J. Arn. Arb. **5**: 72 (1924).

Chosenia bracteosa (Turcz. ex Trautv.) Nakai, Fl. Sylv. Kor. **18**: 59, t. 3–5 (1930), as *C. bracteosa* Nakai; Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 394 (1934); Makino, Illust. Fl. Nippon: 670, fig. 2008 (1940); Ohwi, Fl. Jap.: 397 (1953), as *C. bracteosa* (Turcz.) Nakai.

Chosenia macrolepis (Turcz.) Komarov mstr. *adenantha* Kimura* in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **13**: 389 (1938). Voucher specimen: Manchuria. Jalatun. P. H. & J. H. Dorsett 3481 (TUS-K).

Chosenia arbutifolia (Pall.) Skvortsov in Not. Syst. Herb. Inst. Bot. Kom. Acad. Sci. URSS **18**: 43 (1957); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **27**: 146 (1961); Ohwi, Fl. Jap. ed. Engl.: 362 (1965); Sugaya in Terasaki. Illust.: 98, fig. 380 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 336, f. 793 (1979); Y.L.Chou Fl. Reipubl. Popul. Sin. **20** (2): 79 (1984); Kimura in

Wild Flow. Jap. Wood. **1**: 34, photo 42, 1–6 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 108 (1989); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 88 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 155 (1995).

Chosenia arbutifolia mstr. *adenantha* (Kimura) Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **27**: 146 (1961).

Chosenia arbutifolia f. *adenantha* (Kimura) Kimura ex Kitag., Neo-Lineam. Fl. Mansh.: 202 (1979); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **39**: 145 (1988), sub Fig. 2.

Distr.: Japan, Korea, NE. China, Sakhalin and East Siberia.

*Note: Kimura (1938) described a form with rudimentary nectaries in fruit in this species. He considered this form as abnormal and named it *Chosenia macrolepis* (Turcz.) Komarov mstr. *adenantha* Kimura or *C. arbutifolia* mstr. *adenantha* (Kimura) Kimura. The rank of these names are, however, not clear whether “mstr.” was corresponding to a known rank or was designated as a new additional rank between the known ranks below species. Later, Kitagawa (1979) and Kimura (1988) regarded mstr. *adenantha* Kimura as a form. Kimura (1988) considered this abnormal form as an evidence intermediate *Chosenia* and *Salix*.

I-ii. Sect. **Urbanianae** (Seemen)
C.K.Schneid.

Salix sect. **Urbanianae** (Seemen) C.K.Schneid. in Sarg., Pl. Wilson. **3**: 103 (1916); Nakai, Fl. Sylv. Korea. **18**: 71 (1930); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 64 (1968) & Willows USSR: 103 (1968), sub subgen. *Salix*; Chou in Fl. Reipubl. Pop. Sin. **20** (2): 97 (1984); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **39**: 144 (1988), sub subgen. *Pleuradenia* Kimura; Newsholme, Willows: 23 (1992), sub subgen. *Salix*, p.p. excl. *Chosenia*. **Type**: *Salix urbaniana* Seemen (= *S.*

cardiophylla Trautv. & Mey.).

Salix [unranked] *Urbanianae* Seemen in *Salic. Jap.*: 15 (1903), sub *Salix* A. *Didymadeniae* a. *Pleonandrae* β. *Dolichostylae*. **Type**: *Salix urbaniana* Seemen (= *S. cardiophylla* Trautv. & Mey.).

Toisusu Kimura in *Bot. Mag. Tokyo* **42**: 288 (1928).

2. *Salix cardiophylla* Trautv. & Mey., *Fl. Ochot.*: 77, tab. 19–20 (1856); Tokubuchi in *Bot. Mag. Tokyo* **10**: page (122) (1896); Koidz. in *Bot. Mag. Tokyo* **27**: 97 (1913); Miyabe & Miyake, *Fl. Saghalin*: 424 (1915); C.K.Schneid. in *Sarg., Pl. Wilson.* **3** (1): 103 (1916); Skvortsov, *Willows USSR*: 103 (1968).

Salix maximowiczii Kom. in *Act. Hort. Petrop.* **18**: 442 (1901); C.K.Schneid. in *Sarg., Pl. Wilson.* **3** (1): 100 (1916); Nakai, *Fl. Sylv. Korea.* **18**: 72, t. 6–7 (1930); Kitag., *Neo-Lineam. Fl. Mansh.*: 206 (1979); Chou in *Fl. Reipub. Pop. Sin.* **20** (2): 99, t. 26 (1984).

Salix urbaniana var. *schneideri* Miyabe & Kudo, *Icon. Ess. For. Trees Hokkaido* **1**: 45, tab. 13 (1921).

[*Salix cardiophylla* var. *schneideri* (Miyabe & Kudo) Kudo, *Nippon Yûyo-jumoku Bunruigaku*, ed. 1: 78 (1922), comb. nud.]

Toisusu cardiophylla (Trautv. & Mey.) Kimura in *Bot. Mag. Tokyo* **42**: 288 (1928), in *J. Jap. Bot.* **24**: 546 (1949) & in *Sci. Rep. Tohoku Univ.* 4 ser. (Biol.) **18**: 546, fig. 2 (1950); Nedoluzhko in *Charkevich, Pl. Vascul. Ori. Extr. Soviet.* **7**: 155 (1995).

Toisusu cardiophylla var. *schneideri* (Miyabe & Kudo) Kimura in *Bot. Mag. Tokyo* **42**: 289 (1928).

Toisusu cardiophylla var. *maximowiczii* (Kom.) Kimura in *Bot. Mag. Tokyo* **42**: 289 (1928).

Toisusu urbaniana var. *schneideri* (Miyabe & Kudo) Kimura in *J. Fac. Agric. Hokkaido Imp. Univ. Sapporo* **26**: 397 (1934) & in *Wild Flow. Jap. Wood.* **1**: 34

(1989).

2-1. *Salix cardiophylla* var. *cardiophylla*

Distr.: Japan: Hokkaido and Honshu, Kuriles, Korea, East China, SE. Siberia and Far East Russia: Primorye, Amur, Khabarovsk and Sakhalin.

2-2. *Salix cardiophylla* var. *urbaniana* (Seemen) Kudo, *Nippon Yûyo-jumoku Bunruigaku* ed. 1: 77 (1922); Makino & Nemoto, *Fl. Jap.* ed. 1: 1121 (1925).

Salix urbaniana Seemen in *Bot. Jahrb. Syst.* **21**: Beibl. **52**: 9 (1895) [**Type**: Japan. Hakodate und Nipon. Prov. Nambu. Maximowicz, 1861, n. 2 (K, L isosyn.) & Maximowicz, 1865, n. 4 (K, L isosyn.)] & *Salic. Jap.*: 24, tab. 1 (1903); Tokubuchi in *Bot. Mag. Tokyo*, **10**: page (122) (1896); Shirasawa, *Icon. Ess. For. Trees Jap.* **2**: tab. 10, 1–12 (1908); Miyabe & Miyake, *Fl. Saghalin*: 424 (1915); C.K.Schneid. in *Sarg., Pl. Wilson.* **3** (1): 103 (1916); Makino, *Illust. Fl. Nippon*: 670, fig. 2009 (1940); Hatusima, *Nihon-no-jyumoku*: 690 (1976).

Toisusu cardiophylla var. *urbaniana* (Seemen) Kimura in *Bot. Mag. Tokyo* **42**: 289 (1928).

Toisusu urbaniana (Seemen) Kimura in *J. Fac. Agric. Hokkaido Imp. Univ. Sapporo* **26**: 397 (1934); Ohwi, *Fl. Jap.* ed. Engl.: 362 (1965); Sugaya in *Terasaki. Illust.*: 98, fig. 381 (1977); Kitam. in *Kitam. & Murata, Col. Illust. Woody Pl. Jap.* **2**: 335, fig. 792 (1979); Ohwi & Kitag., *New Fl. Jap.*: 530 (1992); Nova *Fl. Nasu. Suppl.*: 118, figs. 61–65 (1985); Kimura in *Wild Flow. Jap. Wood.* **1**: 34, photo 41, 1–5 (1989); Makino, *New Illust. Fl. Jap. rev. ed.*: fig. 87 (1989); Nedoluzhko in *Charkevich, Pl. Vascul. Ori. Extr. Soviet.* **7**: 158 (1995).

Salix cardiophylla subsp. *urbaniana* (Seemen) Skvortsov, *Willows USSR*: 104 (1968); Sohma in *Sci. Rep. Tohoku Univ.* 4 ser. (Biol.) **40**: 79, 121 (1993).

Toisusu urbaniana mstr. *nematadenia* Kimura in *Sci. Rep. Tohoku Univ.* 4 ser. (Biol.) **20**: 206 (1954) [**Type**: Japan. Iwate

Pref. (Prov. Rikutyu): secus fl. Sekiguchigawa in viculo Sekiya prope oppidulum Yamada. S. Sasamura 1188 (fr.), 10 Jul. 1949 (TUS-K)].

Toisusu urbaniana mstr. *composita* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **20**: 207 (1954) [**Type**: Japan. Hokkaido, Prov. Ishikari, ad ripas fl. Toyohiragawa, Sapporo, A. Kimura 642 (♀ fl.), 20 May 1927 (TUS-K)].

Distr.: Japan: Hokkaido and Honshu, Kuriles, Korea, Eastern China and East Russia: Primorye, Amur, Khabarowsk, Sakhalin and SE. Siberia.

Miyabe and Miyake (1915) suggested for the first time *Salix urbaniana* as a variety of *Salix cardiophylla*.

I-iii. Sect. **Glandulosae** Kimura

Salix sect. **Glandulosae** Kimura in Bot. Mag. Tokyo **42**: 68 (1928), sub subgen. *Protitea* Kimura; Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 81 (1938); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 307 (1979); Newsholme, Willows: 24 (1992), as "Glandulosae Seem." **Type**: *Salix glandulosa* Seemen (= *S. chaenomeloides* Kimura).

Salix [unranked] *Pentandrae* Seemen, Salic. Jap.: 15 (1903), sub *Salix* A. Didymadeniae a. *Pleonandrae* α. *Brachystylae*, non Borrer (1830). **Type**: *Salix glandulosa* Seemen.

Salix sect. *Pentandrae* C.K.Schneid. in Sarg., Pl. Wils. **3**: 98 (1916), as "Pentandrae Dumortier", p.p. cit. *S. glandulosa* Seemen.

Salix sect. *Glandulosae* Nakai in Bull. Soc. Dendr. France no. **66**: 7 (1928 Aug.), non Kimura (1928 Jan.). **Type**: *Salix glandulosa* Seemen.

Salix sect. *Wilsonianae* Hao in Repert. Spec. Nov. Regni Veg. Beih. **93**: 41 (1936); Chou in Fl. Reipub. Pop. Sin. **20** (2): 99 (1984). **Type**: *Salix wilsonii* Seemen.

3. **Salix chaenomeloides** Kimura in Sci.

Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 77 (1938); Ohwi, Fl. Jap. ed. Engl. 364 (1965) & Fl. Jap. ed. rev.: 468 (1965); Kurata, Illust. Imp. For. Tr. Jap. **3**: 6, pl. 3 (1971); Sugaya in Terasaki. Illust.: 98, fig. 382 (1977); Hatusima, Kagoshima-ken Shokubutsu Mokuroku: 35 (1978); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 332, fig. 791 (1979); Chou in Fl. Reipub. Pop. Sin. **20** (2): 105 (1984); Kimura in Nova Fl. Nasu. Suppl.: 113 (1985); Kimura in Wild Flow. Jap. Wood. **1**: 39, photo 43, 1–3 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 88 (1989); Ohwi & Kitag., New Fl. Jap.: 533 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 103 (1993).

Salix glandulosa Seemen in Bot. Jahrb. Syst. **21**: Beibl. **53**: 55 (1896) & Salic. Jap.: 22, tab. 1 (1903), non Raf. (1838); Koidz. in Bot. Mag. Tokyo **27**: 87 (1913); Kimura in Bot. Mag. Tokyo **42**: 69 (1928); Nakai, Fl. Syl. Korea. **18**: 77 (1930); Makino, Illust. Fl. Nippon: 670, fig. 2010 (1940).

Distr.: Japan: Honshu (Southern Tohoku District and southward), Shikoku and Kyushu, Korea and China.

II. Subgen. **Chamaetia** (Dumortier)

Nasarov

Salix subgen. **Chamaetia** (Dumortier) Nasarov, Fl. URSS **5**: 31 (1936); Rechinger in Fl. Europ. **1**: 46 (1964); Argus in Syst. Bot. Monogr. **52**: 58 (1997).

Salix sect. *Chamaetia* Dumortier, Verh. Gesl. Wilgen: 15 (1825) & in Bijdr. Natuurk. Wetensch. **1**: 56 (1826). **Type**: *Salix reticulata* L.

II-i. Sect. **Herbella** Seringe

Salix sect. **Herbella** Seringe, Exemplaires desséchés de la révision inédit du genre *Salix*, 14th page [no pagination] (1824); Argus in System. Bot. Monogr. **52**: 62 (1997), sub subgen. *Chamaetia* (Dumortier) Nasarov. **Type**: *Salix herbacea* L.

Salix [unranked] *Herbaceae* Borrer in

Hook., Brit. Fl.: 432 (1830).

Salix sect. *Retusae* A.Kerner in Verh. Zool.-Bot. Ges. Vereins Wien **10**: 195 (1860); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 65 (1968) & Willows USSR: 118 (1968), sub subgen. *Chamaetia* (Dumortier) Nasarov; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 307 (1979), sub subgen. *Salix*. **Type**: *Salix retusa* L.

Salix sect. *Herbaceae* (Seringe) A.Camus & Camus, Classif. saules Eur. **1**: 106 (1904); C.K.Schneid. in Sarg., Pl. Wils. **3**: 142 (1916), as “*Herbaceae* Borrer”; Nakai, Fl. Sylv. Kor. **18**: 145 (1930), as “*Herbaceae* Borrer”. **Type**: *Salix herbacea* L.

4. *Salix nummularia* Andersson in DC., Prodr. **16** (2): 298 (1868); Skvortsov, Willows USSR: 122 (1968); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 206 (1995).

Salix pauciflora Koidz. in Bot. Mag. Tokyo **32**: 61 (1918) [**Type**: Japan. Yezo. Mt. Nutakkamshpe (= Mt. Daisetsu), alpine belt. H. Koidzumi s.n. Aug. 1917 (TI holo.)]; Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 411 (1934) & in Bot. Mag. Tokyo **42**: 575 (1928); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 469 (1965); Sugaya in Terasaki. Illust.: 100, fig. 388 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 326, fig. 783 (1979); Shimizu, New Alp. Fl. Jap. **2**: 110, fig. 318 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 41, photo 46, 4–6 (1989).

Salix pauciflora var. *stenophylla* Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 413 (1934) [**Type**: Japan, Hokkaido. Prov. Ishikari, in regione alpina montis Daisetsusan. A. Kimura 1824 (♀), 26 Jul. 1927 (TUS-K)].

Salix pauciflora var. *cyclophylla* Kimura in Bot. Mag. Tokyo **42**: 575 (1928) [**Type**: Japan, Hokkaido, Prov. Ishikari, in regione alpina montis Daisetsusan, A. Kimura 1826 (♀), 28 Jul. 1927 (TUS-K)].

Salix nummularia subsp. *pauciflora* (Koidz.) Kimura in Bot. Mag. Tokyo **59**: 87 (1946); Ohwi & Kitag., New Fl. Jap.: 535 (1992).

Salix nummularia subsp. *pauciflora* var. *cyclophylla* (Kimura) Kimura in Bot. Mag. Tokyo **59**: 87 (1946).

Salix nummularia subsp. *pauciflora* var. *stenophylla* (Kimura) Kimura in Bot. Mag. Tokyo **59**: 88 (1946).

Distr.: Japan: Hokkaido and Russia: Kamchatka, Magadan, Siberia to Russia North.

4-1. *Salix nummularia* f. *nummularia*

4-2. *Salix nummularia* f. *hebecarpa* (Kimura) Kimura in Bot. Mag. Tokyo **59**: 88 (1946).

Salix pauciflora Koidzumi var. *hebecarpa* Kimura in J. Fac. Agric. Hokkaido Imp. Univ. **26** (4): 413 (1934) [**Type**: Japan. Hokkaido. Prov. Ishikari, in regione alpina montis Daisetsusan. A. Kimura 1774 (♀), 7 Jul. 1928 (TUS-K)].

Salix pauciflora f. *hebecarpa* (Kimura) Kimura: Ohwi: 365 (1965); Kimura in Wild Flow. Jap. Wood. **1**: 42 (1989).

Salix nummularia var. *hebecarpa* Kimura: Ohwi & Kitag., New Fl. Jap.: 535 (1992).

Distr.: Japan. Occurs with the typical form.

II-ii. Sect. *Myrtilloides* (Borrer) Andersson

Salix sect. *Myrtilloides* (Borrer) Andersson in DC., Prodr. **16** (2): 229 (1868), as “*Salix* sect. *Roseae* seu *Myrtilloides*”; Koehne, Deut. Dendrol.: 89, 102 (1893); C.K.Schneid. in Sarg., Pl. Wils. **3**: 152 (1916), as “*Myrtilloides* Borrer”; Nakai, Fl. Sylv. Kor. **18**: 153 (1930), as “*Myrtilloides* Borrer ex Loudon”; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 65 (1968) & Willows USSR: 124 (1968), ut *Myrtilloides* Koehne, sub subgen. *Chamaetia* (Dumortier) Nasarov; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), ut

“Myrtilloides Borrer”, sub subgen. *Salix*; *Argus* in System. Bot. Monogr. **52**: 67 (1997), sub subgen. *Chamaetia* (Dumortier) Nasarov. **Type**: *Salix myrtilloides* L.

Salix [group] *Myrtilloides* Borrer in Loudon, Arbor. Frutic. Brit. **3**: 1587 (1838).

5. *Salix fuscescens* Andersson, Monogr. Salic.: 97 (1867) & in DC., Prodr. **16** (2): 230 (1868); Schneid. in Sarg., Pl. Wils. **3**: 153 (1916); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **28**: 40 (1962); Skvortsov, Willows USSR: 125 (1968); *Argus*, *Salix* Alaska Yukon: 113 (1973); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 195 (1995).

Salix paludicola Koidz. in Bot. Mag. Tokyo **33**: 219 (1919); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 425 (1934); Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 471 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 315, fig. 768 (1979); T.Shimizu, New Alp. Fl. Jap. **2**: 110, fig. 319 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 47, photo 54, 3 (1989); Ohwi & Kitag., New Fl. Jap.: 536 (1992).

Salix arbutifolia auct. non Pall.: Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26**: 423 (1934) & in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **19**: 196 (1952).

Distr.: Japan: Hokkaido, Russia: Primorye, Sakhalin, Kamchatka, Magadan and Siberia and North America: Yukon, Alaska and Canada.

II-iii. Sect. *Glaucæ* Andersson

Salix sect. *Glaucæ* Andersson in DC., Prodr. **16** (2): 273 (1868); Pax in Engl. & Prantl, Natürl. Pflanzenfam. **3** (1): 37 (1889), p.p.; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 65 (1968) & Willows USSR: 128 (1968), sub subgen. *Chamaetia* (Dumortier) Nasarov; *Argus* in System. Bot. Monogr. **52**: 68 (1997), sub subgen. *Chamaetia* (Dumortier) Nasarov. **Type**: *Salix glauca* L.

[*Salix* tribe *Glaucæ* Fries in Physiogr. Sällsk. Årsb. **2**: 35 (1825), nom. illeg.].

Salix sect. *Ovalifoliae* (Rydberg) C.K.Schneid. in Sarg., Pl. Wilson. **3**: 140 (1916); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), ut “sect. *Ovalifoliae* Rydberg” sub subgen. *Salix*; *Argus* in System. Bot. Monogr. **52**: 65 (1997), sub subgen. *Chamaetia* (Dumortier) Nasarov.

6. *Salix nakamurana* Koidz. in Bot. Mag. Tokyo **27**: 96 (1913) [**Type**: Japan. Honshu. Nagano Pref. (Prov. Shinano), monte Orengezan (sphalm. Dailengezan), [Etigo-guti]. M. Nakamura s.n. (♀), 4 Aug. 1912 (TI lecto. designated by A. Kimura 1981)]; C.K.Schneid. in Sarg., Pl. Wils. **3**: 135 (1916); Kimura in Bot. Mag. Tokyo **42**: 574 (1928) & in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **2**: 198 (1931); Makino, Illust. Fl. Nippon: 675, fig. 2024 (1940); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 470 (1965); Skvortsov, Willows USSR: 136 (1968); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 313, fig. 766 (1979); T.Shimizu, New Alp. Fl. Jap. **2**: 114, fig. 322 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 47, photo 54, 1–2 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 106 (1989); Ohwi & Kitag., New Fl. Jap.: 535 (1992); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 199 (1995).

Salix nakamurana var. *stenophylla* Kimura in Bot. Mag. Tokyo **42**: 574 (1928) [**Type**: Japan. Honshu. Nagano Pref. (Prov. Shinano), Monte Yatsugatake. A. Kimura 712 (♀ fl.), 12 Jul. 1927 (TUS-K holo.)].

Salix nakamurana f. *stenophylla* (Kimura) Kimura in Ecol. Rev. **13**: 200 (1953) & in Wild Flow. Jap. Wood. **1**: 47 (1989).

Salix nakamurana mstr. *multicapsularis* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **18**: 549 (1950) [**Type**: Japan. Honshu. Nagano Pref. (Prov. Shinano), in regionibus alpinis montis Yatsugatake, inter saxa et rupes. A. Kimura 1243 (♀ fl.), 10

Jul. 1926 (TUS-K holo.)).

6-1. *Salix nakamurana* subsp. **nakamurana**

Distr.: Japan, Central Honshu (Yamanashi and Nagano Prefs.). Rare on alpine slopes.

6-1-1. *Salix nakamurana* subsp. *nakamurana* f. **nakamurana**

6-1-2. *Salix nakamurana* subsp. *nakamurana* f. **eriocarpa** (Kimura) T.Shimizu, New Alp. Fl. Jap. **2**: 357 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 47 (1989).

Salix nakamurana var. *eriocarpa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6**: 189 (1931) [**Type**: Japan. Honshu. Nagano Pref. (Prov. Shinano), monte Yatsugatake. A. Kimura no. 712 (♀ fl.), 12 Jul. 1927 (TUS-K holo.)]; Ohwi & Kitag., New Fl. Jap.: 535 (1992).

Distr.: Japan. Occurs with the typical form.

6-2. *Salix nakamurana* subsp. **kurilensis** (Koidz.) H.Ohashi, comb. & stat. nov.

Salix kurilensis Koidz. in Bot. Mag. Tokyo **32**: 62 (1918) [**Type**: Kuriles. Ins. Shumushu. K. Yendo s.n. (♀ fl.), 29 Jun. 1903 (TI holo.)]; Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 406 (1934); Skvortsov, Willows USSR: 136 (1968); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 199 (1995).

Salix longepetiolata Flod. in Ark. Bot. **20A**, **6**: 14 (1926).

Salix hidakamontana H.Hara in J. Jap. Bot. **9**: 512, fig. 1 (1933), as "*S. hidakamontana*" [**Type**: Japan. Hokkaido. Prov. Hidaka, in summo monte Rakko. H. Hara 2994 (fr.), 8 Aug. 1933 (TI holo.)]; Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 408 (1934); Ohwi, Fl. Jap.: 402 (1953); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 470 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 314 (1979); T.Shimizu, New Alp. Fl. Jap. **2**: 113, fig. 321 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 48, photo 54, 4 (1989); Ohwi &

Kitag., New Fl. Jap.: 535 (1992).

Distr.: Japan: Hokkaido (Mt. Rakko in Mts. Hidaka) and Kuril Islands.

6-3. *Salix nakamurana* subsp. **yezoalpina** (Koidz.) H.Ohashi, stat. nov.

Salix cyclophylla Seemen in Bot. Jahrb. Syst. **30**: Beibl. **67**: 41 (1901) [**Type**: Japan. Jesso, Gipfel des Rishiri. U. Faurie 3713, 25 Jul. 1899–n.v.] & Salic. Jap.: 69, tab. 16 (1903), non Rydberg (1899).

Salix yezoalpina Koidz. in Bot. Mag. Tokyo **30**: 332 (1916); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 407 (1934); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 470 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 313, fig. 767 (1979); T.Shimizu, New Alp. Fl. Jap. **2**: 113, fig. 320 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 48, photo 54, 5–6 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 92 (1989); Ohwi & Kitag., New Fl. Jap.: 535 (1992).

Salix nakamurana var. *yezoalpina* (Koidz.) Kimura in Bot. Mag. Tokyo **42**: 574 (1928).

Salix yezoalpina f. *grandifolia* (Nakai) Kimura in Ecol. Rev. **13**: 201 (1953) & in Wild Flow. Jap. Wood. **1**: 48 (1989).

Salix yezoalpina f. *stenophylla* (Nakai) Kimura in Ecol. Rev. **13**: 201 (1953) & in Wild Flow. Jap. Wood. **1**: 48 (1989).

Distr.: Japan: Hokkaido (Mt. Taisetsu and Isl. Rishiri), endemic. On rocky slopes.

6-3-1. *Salix nakamurana* subsp. *yezoalpina* f. **yezoalpina** (Koidz.) H.Ohashi, comb. nov.

6-3-2. *Salix nakamurana* subsp. *yezoalpina* f. **neoreticulata** (Nakai) H.Ohashi, comb. nov.

Salix neoreticulata Nakai [Tennenkinenbutsu Chosahokoku, Bot. **12** (Rep. Veg. Daisetsusan Mts.): 45, 1930] ex Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26** (4): 408 (1934), as "*neo-reticulata*" [**Type**: Hokkaido. Prov. Ishikari, Takanegahara, monte Daisetsu. T. Nakai

s.n., Aug. 1928 (TI holo.)); Ohwi, Fl. Jap.: 402 (1953).

Salix yezoalpina var. *neoreticulata* (Nakai) Kimura in Ecol. Rev. **13**: 201 (1953); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 314 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 48 (1989).

Salix yezoalpina f. *neoreticulata* (Nakai) T. Shimizu, New Alp. Fl. Jap. **2**: 357 (1983).

Distr.: Japan: Hokkaido (Mt. Taisetsu).

III. Subgen. *Salix*

Salix subgen. *Salix*: Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 63 (1968), p.p. excl. sect. Humboldtianae & Urbanianae & Willows USSR: 97 (1968), p.p. excl. subgen. Protitea & genus Toisusu; Dorn in Can. J. Bot. **54**: 2774 (1976), p.p. excl. subgen. Pleiolepis & Protitea; Argus in Syst. Bot. Monog. **52**: 50 (1997), p.p. excl. subgen. Pleiolepis & Protitea; Newsholme, Willows: 22, 23 (1992), p.p. **Type**: *Salix alba* L.

Salix sect. Amerina Dumortier, Verh. Gesl. Wilgen: 15 (1825).

Salix subgen. Amerina (Dumortier) Dumortier in Bull. Soc. Roy. Bot. Belg. **1**: 145 (1862). **Type**: *Salix alba* L.

Salix subgen. Euitea Kimura in Bot. Mag. Tokyo **42**: 290 (1928) & in Sci. Rep. Tôhoku Imp. Univ. 4th ser. Biol. **13**: 394 (1938). **Type**: *Salix pentandra* L.

Salix subgen. Calyptrolepis Nakai in Bull. Soc. Dendrol. Fr. **66**: 43 (1928). **Type**: *Salix pentandra* Seemen.

III-i. Sect. *Triandrae* Dumortier

Salix sect. *Triandrae* Dumortier in Bijdr. Nat. Wetens. **1**: 58 (1825) & in Bull. Soc. Roy. Bot. Belg. **1**, 1: 146 (1862); C.K. Schneid. in Sarg., Pl. Wils. **3**: 106 (1916); Nakai in Bull. Soc. Dendrol. Fr. **66**: 9 (1928) & Fl. Sylv. Kor. **18**: 85 (1930). **Type**: *Salix triandra* L.

Salix sect. Amygdalinae Koch, Salic. Europ. Comment.: 11 & 17 (1828) & Syn.

Fl. Germ. Helv. **2**: 644 (1837); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 64 (1968) & Willows USSR: 99 (1968), sub subgen. *Salix*; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 307 (1979), sub subgen. *Salix*; Chou in Fl. Reipub. Pop. Sin. **20** (2): 120 (1984); Newsholme, Willows: 24 (1992). **Type**: *Salix triandra* L.

7. *Salix triandra* L., Sp. Pl.: 1016 (1753); Chou in Fl. Reipub. Pop. Sin. **20** (2): 121 (1984); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 107 (1993).

Salix amygdalina L., Sp. Pl.: 1016 (1753).

Salix amygdalina var. *discolor* Wimmer & Grabowski, Fl. Siles. **3**: 362 (1829); Trautv. in Maxim., Prim. Fl. Amur.: 242 (1859).

Salix subfragilis Andersson in Mem. Amer. Acad. **6** (2): 450 (1858) [**Type**: Japan. Hokkaido, ad Hakodate (ut Hakodadi). Williams & Morrow (not in GH)—n.v.]; Kimura in Acta Phytotax. Geobot. **13**: 188 (1944); Ohwi, Fl. Jap. ed. Engl.: 364 (1965) & Fl. Jap. ed. rev.: 468 (1965); Kurata, Illust. Imp. For. Tr. Jap. **3**: 4, pl. 4 (1971); Sugaya in Terasaki. Illust.: 98, fig. 383 (1977); Hatusima, Kagoshima-ken Shokubutsu Mokuroku: 35 (1978); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 332, fig. 790 (1979); Lauener & McKean in Notes RBG Edinb. **41**: 178 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 39, photo 43, 4–6 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 89 (1989); Ohwi & Kitag., New Fl. Jap.: 533 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 107 (1993).

Salix triandra var. *discolor* (Wimmer & Grabowski) Andersson in DC., Prodr. **12** (2): 203 (1868); Nakai, Fl. Sylv. Kor. **18**: 87 (1930); Makino, Illust. Fl. Nippon: 671, fig. 2011 (1940).

Salix nipponica Franch. & Sav., Enum. Fl. Pl. Jap. [**1**: 459 (1875), nom. nud.] **2**: 502 (1876) [**Type**: Nippon media. circa Yokoska. Savatier 1139 (P syn.—n.v.);

Niigata, Savatier 2717 (P syn.-n.v., LE isosyn. fide Skvortsov)]; Tokubuchi in Bot. Mag. Tokyo **10**: page (122) (1896); Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. **7**: 166 (1995).

Salix triandra L. var. *nipponica* (Franch. & Sav.) Seemen, Salic. Jap.: 27, tab. 2 (1903); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 401 (1934); Chou in Fl. Reipub. Pop. Sin. **20** (2): 121 (1984).

Salix triandra H.Lév. & Vaniot in Bull. Soc. Bot. Fr. **52**: 141 (1905); 143 (1906) [**Type**: Japan. Honshu. Aomori, May 1902. Kinashi 11 (E holo.-n.v.)].

Salix hamatidens H.Lév. in Bull. Soc. Bot. Fr. **56**: 301 (1909) [**Type**: Japan. Hokkaido, secus aquas Sapporo, 13 June 1908. U. Faurie 263 (E syn.-n.v.), U. Faurie 264 (E syn.-n.v.)].

Salix amygdalina var. *nipponica* (Franch. & Sav.) C.K.Schneid. in Sarg., Pl. Wils. **3**: 106 (1916).

Salix triandra L. subsp. *nipponica* (Franch. & Sav.) Skvortsov, Willows USSR: 100 (1968).

Distr.: Japan: Hokkaido, Honshu, Shikoku and Kyushu, Korea, NE. & N. China and Russia: Sakhalin, Khabarovsk, Primorye, Amur and Siberia to Europe.

Note: The Japanese plants have been regarded as different from *Salix triandra* as a distinct species or an infraspecific taxon. Comparing them with specimens of *Salix triandra* from Europe no definite differences are found, although tendency in variation is seen in persistency of stipules, degree of development of leaves on inflorescence branchlets and persistency of hairs on young leaves and branchlets. Morphological variation seems to be continuous within the areas of distribution from Europe to Asia and Japan. *Salix triandra* L. is used for the Japanese plants.

Salix subfragilis Andersson was described based on a female twig collected in Hokkaido. It was regarded by Kimura

(1944) as identical with *S. nipponica* or by Skvortsov (1968b) as *S. babylonica*. Unfortunately the type specimen is not found in GH, although so designated in the protologue of *S. subfragilis*.

III-ii. Sect. *Subalbae* Koidz.

Salix sect. *Subalbae* Koidz. in Bot. Mag. Tokyo **27**: 88 (1913), in adnot.; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 64 (1968) & Willows USSR: 113 (1968), sub subgen. *Salix*; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 307 (1979), sub subgen. *Salix*; Argus in System. Bot. Monogr. **52**: 52 (1997). **Type**. *Salix hondoensis* Koidz. (= *Salix pierotii* Miq.).

Salix [unranked] *Subfragiles* Seemen, Salic. Jap.: 15 (1903), sub *Salix* A. Didymadeniae b. Diandrae.

Salix sect. *Subfragiles* Nakai, Fl. Sylv. Kor. **18**: 163 (1930); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **28**: 43 (1962). **Type**. *Salix subfragilis* L. (= *Salix babylonica* L.).

Salix sect. *Fragiles* Koch: Newsholme, Willows: 24 (1992), p.p. incl. *S. matsudana*.

Salix sect. *Albae* Borrer: C.K.Schneid. in Sarg., Pl. Wils. **3**: 109 (1916), p.p.

Salix sect. *Salix*: Chou in Fl. Reipub. Pop. Sin. **20** (2): 122 (1984), p.p.; Newsholme, Willows: 24 (1992), p.p. incl. sect. *Subalbae*.

8. ***Salix babylonica** L., Sp. Pl.: 1017 (1753); Franch. & Sav., Enum. Pl. Jap. **1**: 459 (1875); Seemen, Salic. Jap.: 29, tab. 3 (1903); C.K. Schneid. in Sarg., Pl. Wilson. **3**: 42 (1916); Makino, Illust. Fl. Nippon: 673, fig. 2018 (1940); Ohwi, Fl. Jap. ed. Engl.: 364 (1965) & Fl. Jap. ed. rev.: 468 (1965); Skvortsov, Willows USSR: 114 (1968); Sugaya in Terasaki. Illust.: 100, fig. 386 (1977); Chou in Fl. Reipub. Pop. Sin. **20** (2): 138 (1984); Nova Fl. Nasu. Suppl.: 112 (1985); Kimura in Wild Flow. Jap. Wood. **1**: 41, photo 46, 1-2 (1989); Makino,

New Illust. Fl. Jap. rev. ed.: fig. 99 (1989); Ohwi & Kitag., New Fl. Jap.: 533 (1992).

Salix pendula Moench, Meth.: 336 (1794).

Salix babylonica var. *lavalleyi* Dode in Bull. Soc. Dendr. Fr. no. 76: 93 (1930); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 24: 115 (1958) & in J. Jap. Bot. 53: 193 (1978); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 328, fig. 786 (1979).

Salix ohsidare Kimura in Bot. Mag. Tokyo 59: 79 (1946) [Type: Japan. Aomori Pref. (Prov. Mutsu). Aomori, cult. A. Kimura 2166 (♀ fl.), 9 May 1933 (TUS-K lecto. designated by Kimura 1981)]; Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 24: 113, fig. 1, tab. 1–2 (1958); Ohwi, Fl. Jap.: 401 (1953) & Fl. Jap. ed. Engl.: 365 (1965); Ohwi & Kitag., New Fl. Jap.: 534 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 119 (1993).

Distr.: Japan: Widely cultivated, imported from Korea or China in old time. Probably spontaneous in central China.

8-1. **Salix babylonica* f. *babylonica*

8-2. **Salix babylonica* f. *rokkaku* Kimura in J. Jap. Bot. 53: 193, figs. 1–4 (1978) [Type: Japan. Miyagi Pref. (Prov. Rikuzen), Sendai, cult. in Hort. Bot. Fac. Sci. Tohoku Univ. A. Kimura 3417 (fol.), 11 Nov. 1968 (TUS-K holo.)]; Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 123 (1993).

Salix elegantissima auct. non K.Koch: Nakai, Fl. Sylv. Korea. 18: 163 & 171 (1930); Ohwi, Fl. Jap. ed. Engl.: 364 (1965).

Distr.: Cultivated.

8-3. **Salix babylonica* f. *seiko* Kimura [in Ishii, Engei daiziten 4: 2429 (1956), nom. nud.] in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 24: 115, fig. 2 (1958) [Type: Japan. Honshu, Kyoto Pref. (Prov. Yamashiro), Uji, cult. A. Kimura 3157 (fol.), 19 Oct. 1955 (TUS-K holo.)]; Seibutsugakugokenkyûsho: Fl. Sedis Imperatoris Japon.: 186, figs. 81–83 (1989); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 125 (1993).

Distr.: Cultivated.

9. **Salix matsudana* Koidz. in Bot. Mag. Tokyo 29: 312 (1915); Chou in Fl. Reipub. Pop. Sin. 20 (2): 132 (1984).

var. *tortuosa* Vilm. in J. Soc. Nat. Hort. Fr. ser. 4, 25: 350 (1924); Ohwi, Fl. Jap.: 401 (1953); Sugaya in Terasaki. Illust.: 99, fig. 384 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 327, fig. 784 (1979); Kimura in Wild Flow. Jap. Wood. 1: 41, photo 46, 3 (1989).

Salix matsudana f. *tortuosa* Rehder in J. Arn. Arb. 6: 206 (1925); Ohwi, Fl. Jap. ed. rev.: 468 (1965); Chou in Fl. Reipub. Pop. Sin. 20 (2): 133 (1984); Ohwi & Kitag., New Fl. Jap.: 533 (1992).

Salix matsudana cv. *Tortuosa*: Ohwi, Fl. Jap. ed. Engl.: 364 (1965).

Distr.: Japan, cultivated in a park or garden for ornamental in Japan. Female plants are rare; China and Korea. Native in North China.

10. *Salix eriocarpa* Franch. & Sav., Enum. Pl. Jap. [1: 459 (1875), nom. nud.] 2: 503 (1876) [Type: Nippon media. circa Hemi prope Yokoska. Savatier 2718 (P-n.v.)]; Ohwi, Fl. Jap. 401 (1953), l. c. ed. Engl.: 364 (1965) & Fl. Jap. ed. rev.: 468 (1965); Chou in Fl. Reipub. Pop. Sin. 20 (2): 141 (1984); Kimura in Wild Flow. Jap. Wood. 1: 40 (1989); Ohwi & Kitag., New Fl. Jap.: 533 (1992).

Salix dolichostyla Seemen in Bot. Jahrb. Syst. 30, Beibl. 67: 39 (1901) & Salic. Jap.: 26, tab. 2 (1903).

Distr.: Japan, mostly Kantô Districts and westward (introduced?), Korea and China.

Note: This species is recognized as native in Japan. Kimura (1989) supposed, however, this willow was imported into Japan in ancient time, because no male plants found in Japan and it found usually growing within living territories of human beings.

11. **Salix pierotii** Miq., Ann. Mus. Lugd.-Bat. **3**: 27 (1867) & Prolusio Fl. Jap. **4**: 215 (1867) [**Type**: Japan. in Monte Iwaja (vel Iwajama), ubi frequens in unguis et in vallibus, m. Aprili florentem detexit Siebold (L?-n.v.); in promontorio Nomo-Saki insulase Kiusiu. Pierot 181 (L syn.)*]; C.K.Schneid. in Sarg., Pl. Wils. **3**: 165 (1916); Koidz. in Bot. Mag. Tokyo **40**: 346 (1926); Skvortsov, Willows USSR: 113 (1968), p.p., excl. *S. jessoensis*, *S. hondoensis* & *S. hirosakensis*; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 328, fig. 785 (1979); Kimura in J. Jap. Bot. **59**: 1 (1984); Chou in Fl. Reipub. Pop. Sin. **20** (2): 147 (1984); Kimura in Wild Flow. Jap. Wood. **1**: 39, photo 44, 1-4 (1989); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 123 & 134 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 169 (1995). *The type composed of 2 branchlets; one with young inflorescences and the other with somewhat young leaves. The two branchlets belong to the same species.

Salix koreensis Andersson in DC., Prodr. **16** (2): 271 (1868); Koidz. in Bot. Mag. Tokyo **27**: 89 (1913) & **30**: 332 (1916); Nakai, Fl. Sylv. Kor. **18**: 164 (1930); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 469 (1965); Sugaya in Terasaki. Illust.: 98, fig. 385 (1977); Lauener & McKean in Notes RBG Edinb. **41**: 177 (1983); Chou in Fl. Reipub. Pop. Sin. **20** (2): 143 (1984); Ohwi & Kitag., New Fl. Jap.: 534 (1992).

Salix pseudokoreensis Koidz. in Bot. Mag. Tokyo **40**: 346 (1926) [**Type** not designated].

Distr.: Japan: SW. Hokkaido, Honshu (Hokuriku, Chugoku and Kinki Districts), Shikoku and Kyushu, Korea and Far East Russia: Amur, Ussuri, Khabarovsk and Primorye.

11-1. *Salix pierotii* f. **pierotii**

11-2. **Salix pierotii* f. **auricomans** Kimura in J. Jap. Bot. **59**: 1 (1984) [**Type**:

Japan, Aichi Pref. (Prov. Mikawa), cult. in Kamekubityo urbis Toyota, K. Kitagawa s.n. (♀ fl.), 2 Apr. 1982 (TUS-K holo.)].

Distr.: Cultivated.

12. **Salix yoshinoi** Koidz. in Bot. Mag. Tokyo **29**: 314 (1915) [**Type**: Japan, Honshu, Okayama Pref. (Prov. Bittyu), Kawakamigori, Ae (errore Abe), Z. Yoshino 300 (♀ fl.), 24 Apr. 1914 (TI holo.)] & in Bot. Mag. Tokyo **30**: 332 (1916); Ohwi, Fl. Jap. ed. Engl.: 364 (1965) & Fl. Jap. ed. rev.: 469 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 330, fig. 788 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 40, photo 50, 5-7 (1989); Ohwi & Kitag., New Fl. Jap.: 534 (1992).

Salix pseudoyoshinoi Koidz. in Acta Phytotax. Geobot. **4**: 40 (1935) [**Type**: Japan, Honshu, Okayama Pref. (Prov. Bittyu), Matsuyamamura, Awoki, Z. Yoshino s.n. (ster.), Jul. 13, 1926 (KYO lecto. designated by A. Kimura 1981)].

Salix yoshinoi f. *pseudoyoshinoi* (Koidz.) Kimura in Wild Flow. Jap. Wood. **1**: 40 (1989).

Distr.: Endemic to Japan: Honshu (Kinki and Chûgoku Districts) and Shikoku.

13. **Salix jessoensis** Seemen, Salic. Jap.: 31, tab. 3 (1903) [**Type**: Japan. Hokkaido, Sapporo, Tokubuchi, 1891 (SAPT holo.)]; Miyabe & Kudo, Icon. Ess. For. Trees Hokkaido **1**: 49, tab. 14 (1921); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 402 (1934); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 469 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 331, fig. 789 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 40, photo 45, 5-7 (1989); Ohwi & Kitag., New Fl. Jap.: 534 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 117 (1993).

Salix eriocarpa auct. non Franch. & Sav.: Tokubuchi in Bot. Mag. Tokyo **10**: page (122) (1896).

Salix dolichostyla var. *hirosakensis* H.Lévl. in Repert. Spec. Nov. Regni Veg. **3**: 22 (1907).

Salix hondoensis Koidz. in Bot. Mag. Tokyo **27**: 88 (1913) [**Type**: Japan. Honshu. Yamagata Pref. (Prov. Uzen), Minamiokitama-gun, Seki-no-sanson. G. Koidzumi s.n. (♀ fl.), May 1910 (TI-lecto. designated by A. Kimura 1981)].

Salix hirosakensis (H.Lévl.) Koidz. in Bot. Mag. Tokyo **27**: 264 (1913).

13-1. *Salix jessoensis* subsp. **jessoensis**

Endemic to Japan: Hokkaido and Honshu.

13-2. *Salix jessoensis* subsp. **serissaefolia** (Kimura) H. Ohashi, comb. nov.

Salix serissaefolia Kimura in Bot. Mag. Tokyo **40**: 639 (1926) [**Type**: Japan. Honshu. Shizuoka Pref. (Prov. Suruga), prope Subashiri, pede Fujisan. A. Kimura 197 (♀ fl.), 12 May 1924 (TI holo.; TUS-K iso.)]; Ohwi, Fl. Jap. ed. Engl.: 364 (1965) & Fl. Jap. ed. rev.: 469 (1965); Nova Fl. Nasu.: 143, figs. 68–70 (1972); Sugaya in Terasaki. Illust.: 100 fig. 387 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 330, fig. 787 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 40, photo 45, 1–4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 100 (1989); Ohwi & Kitag., New Fl. Jap.: 534 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 126 (1993).

Distr.: Endemic to Japan: Honshu (Kantô to Kinki Districts).

IV. Subgen. **Vetrix** Dumortier

Salix subgen. **Vetrix** Dumortier in Bull. Soc. Bot. Belg. **1**: 141 (1862); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 66 (1968) & Willows USSR: 147 (1968); Dorn in Can. J. Bot. **54**: 2776 (1976); Argus in System. Bot. Monogr. **52**: 70 (1997). **Type**: *Salix caprea* L.

Salix subgen. **Chamaetia** (Dumortier) Nasarov, Fl. URSS **5**: 31 (1936).

Salix subgen. **Caprisalix** (Dumortier) Nasarov, Fl. URSS **5**: 57 (1936); Rech. f. in

Fl. Europ. **1**: 47 (1964), as “subgen. *Caprisalix* Dumortier”; Newsholme, Willows: 22 & 24 (1992). **Type**: *Salix caprea* L.

IV-i. Sect. **Hastatae** A.Kerner

Salix sect. **Hastatae** A.Kerner in Verh. Zool.-Bot. Ges. Vereins Wien **10**: 241 (1860); C.K.Schneid. in Sarg., Pl. Wils. **3**: 129 (1916); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 66 (1968) & Willows USSR: 147 (1968); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 306 (1979), sub subgen. *Salix*; Argus in System. Bot. Monogr. **52**: 70 (1997). **Type**: *Salix hastata* L.

Salix sect. **Cordatae** Barr. ex Hook.: Newsholme, Willows: 25 (1992), p.p. incl. sect. **Hastatae**.

[*Salix* tribe **Hastatae** Fries, Physiogr. Sällsk. Årsb. **2**: 34 (1825), nom. illeg.].

14. **Salix japonica** Thunb. in Murray, Syst. Veg. ed. 14: 879 (1784), Fl. Jap.: 24 (1784) [**Type**: Japan. Thunberg (UPS-n.v.)], Icon. Pl. Jap. **4**: tab. 1 (1802), & Pl. Jap. Nov. Sp.: 4 (1824); Franch. & Sav., Enum. Pl. Jap. **1**: 459 (1875); Koidz. in Bot. Mag. Tokyo **27**: 90 (1913), cum f. *typica* Koidz.; Seemen, Salic. Jap.: 43, tab. 7, figs. A–E (1903); C.K.Schneid. in Sarg., Pl. Wils. **3**: 132 (1916); Kimura in Sci. Rep. Tohoku Imp. Univ. **15**: 415 (1940); Makino, Illust. Fl. Nippon: 674, fig. 2021 (1940); Kimura in Ecol. Rev. **13**: 135 (1953); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 473 (1965); Kurata, Illust. Imp. For. Tr. Jap. **4**: 1, pl. 1 (1973); Sugaya in Terasaki. Illust.: 102, fig. 397 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 325, fig. 782 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 45, photo 52, 1–4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 103 (1989); Ohwi & Kitag., New Fl. Jap.: 538 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 119 (1993).

Salix padifolia Andersson in Mem. Am.

Acad. **6**: 451 (1859), in Svensk. Vetensk. Akad. Handl. **6**: 165 (1867) & in DC., Prodr. **16** (2): 255 (1868).

Salix babylonica var. *japonica* Andersson in Svensk. Vetensk. Akad. Handl. **6**: 51 (1867) & in DC., Prodr. **16** (2): 213 (1868).

Salix oldhamiana Miq., Ann. Mus. Ludg.-Bat. **3**: 25 (1867).

Salix japonica var. *oldhamiana* (Miq.) Franch. & Sav., Enum. Pl. Jap. **1**: 459 (1875).

Salix japonica var. *pygmaea* Franch. & Sav., Enum. Pl. Jap. **1**: 459 (1875) [**Type**: Japan. circa Yokoska. Savatier (P-n.v.)] & **2**: 503 (1913).

Salix fauriei Seemen in Bot. Jahrb. Syst. **30**: Beibl. **67**: 40 (1901) & Salic. Jap.: 48, tab. 8 (1903) [**Type**: Japan. Honshu, Kanagawa Pref. (Prov. Sagami), Yamakita. U. Faurie 3700 p.p. (♀ fl.), 8 May 1899 (KYO iso.)]; C.K.Schneid. in Sarg., Pl. Wils. **3**: 134 (1916).

Salix japonica var. *padifolia* (Andersson) Seemen, Salic. Jap.: 45, tab. 8, figs. A-B (1903).

Salix japonica f. *padifolia* (Seemen) Koidz. in Bot. Mag. Tokyo **27**: 91 (1913).

Salix japonica f. *oldhamiana* (Franch. & Sav.) Koidz. in Bot. Mag. Tokyo **27**: 91 (1913), as "f. *oldhami*".

Salix japonica f. *pygmaea* (Franch. & Sav.) C.K.Schneid. in Sarg., Pl. Wils. **3**: 132 (1916).

Salix japonica var. *angustifolia* Kimura in Bot. Mag. Tokyo **42**: 573 (1928) [**Type**: Japan. Honshu, Tokyo Pref. (Prov. Musashi), Mitamura-Sawai. K. Hisauchi 2 (fol.), 20 Jul. 1919 (TUS-K holo.)].

Salix japonica var. *angustifolia* f. *fauriei* (Seemen) Kimura in Sci. Rep. Tohoku Imp. Univ. **15**: 416 (1940).

Salix japonica f. *angustifolia* (Kimura) Kimura in Ecol. Rev. **13**: 200 (1953).

Salix japonica f. *angustifolia* subf. *fauriei* (Seemen) Kimura in Ecol. Rev. **13**: 200 (1953).

Salix babylonica auct. non L.: Thunb. in Nova Acta Reg. Soc. Scient. Upsal. **3**: 207 (1780).

Distr.: Endemic to Japan: Honshu (southern Tohoku, Kantô and Chubu Districts).

15. *Salix shiraii* Seemen in Bot. Jahrb. Syst. **30**: Beibl. **67**: 40 (1901) & Salic. Jap.: 42, tab. 6 (1903); C.K.Schneid. in Sarg., Pl. Wils. **3**: 135 (1916); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 472 (1965); Sugaya in Terasaki. Illust.: 102, fig. 396 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 324, fig. 780 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 45, photo 50, 5-7 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 104 (1989); Ohwi & Kitag., New Fl. Jap.: 538 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 119 (1993).

Salix kenoensis Koidz. in Bot. Mag. Tokyo **27**: 265 (1913) [**Type**: Japan. Honshu, Saitama Pref. (Prov. Musashi), Chichibu, Mt. Buko. S. Matsuda 104 (fr.). May 1901 (TI lecto. selected by Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **28**: 37. 1962)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 310 (1979).

Salix shiraii var. *kenoensis* (Koidz.) Sugimoto, New Keys Jap. Tr.: 472 (1961) & New Keys Woody Pl. Japan: 98 (1972).

Distr.: Endemic to Japan: Honshu (Northern Kantô and southern Tohoku Districts).

16. *Salix rupifraga* Koidz. in Bot. Mag. Tokyo **33**: 121 (1919) [**Type**: Japan, Honshu, Yamanashi Pref. (Prov. Kai), Komagadake, [Shinshû Higashi-Komagadake]. G. Koidzumi s.n. (fol. cum fr.) (TI holo., TUS-K iso.)]; Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 74, fig. 3, tt. 8-9 (1938); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 472 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 325, fig. 781 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 46, photo 50, 5-

7 (1989); Ohwi & Kitag., New Fl. Jap.: 538 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 100 (1993).

Distr.: Japan: Central Honshu (Gunma, Nagano and Yamanashi Prefs.).

16-1. *Salix rupifraga* f. **rupifraga**

16-2. *Salix rupifraga* f. **eriocarpa** (Kimura) Kimura [in Wild Flow. Jap. Wood. **1**: 46 (1989), comb. nud.] ex H. Ohashi, stat. nov.

Salix rupifraga var. *eriocarpa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 75, fig. 4 (1938) [**Type**: Japan. Honshu, Yamanashi Pref. (Prov. Kai), in rupium fissuris, Komakimura. S. Huno s.n. (fr.), 7 Jun. 1936 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 325 (1979); Ohwi & Kitag., New Fl. Jap.: 538 (1992).

Distr.: Occurs with the typical form.

IV-ii. Sect. **Sieboldianae** (Seemen) C.K.Schneid.

Salix sect. **Sieboldianae** (Seemen) C.K.Schneid., Illust. Handb. Laubholz. **1**: 69 (1904), as "Sieboldianae Seem." & in Sarg., Pl. Wilson. **3**: 161 (1916); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), sub subgen. *Salix*. **Type**: *Salix sieboldiana* Blume.

Salix [unranked] *Sieboldianae* Seemen in Salic. Jap.: 21 (1903), sub *Salix* C. Monadeniae c. Submonandrae.

17. **Salix sieboldiana** Blume, Bijdr. Fl. Ned. Ind. **10**: 517 (1825) [**Type**: Crescit: sub nomine *S. albae* a Doct. v. Siebold ex Japonia missa et nunc in horto botanico Buitenzorgii culta. (not in L, n.v.)]; Miq., Ann. Mus. Lugd.-Bat. **3**: 28 (1867); Franch. & Sav., Enum. Pl. Jap. **1**: 460 (1875); Seemen, Salic. Jap. 63*, tab. 14, figs. F-K (1903); C.K.Schneid. in Sarg., Pl. Wilson. **3**: 162 (1916); Ohwi, Fl. Jap.: 408 (1953); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 476 (1965); Hatusima, Nihon-

no-jyumoku: 691 (1976); Sugaya in Terasaki. Illust.: 104, fig. 406 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 307, fig. 760 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 51, photo 58, 5-7 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 107 (1989); Ohwi & Kitag., New Fl. Jap.: 541 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 92 (1993). *According to Seemen (1903), the specimens are "Japan: ohne Angabe des Standorts (Siebold p. part., Buerger, Textor); Insel Kiuschiu; Nagasaki (Eyckman)."

Salix buergeriana Miq. in Ann. Mus. Bot. Lugd.-Bat. **3**: 28 (1867) [**Type**: Japan, locis non indicatis, ex Siebold, Buerger & Mohnike s.n. (? , not in L, n.v.)]; C.K.Schneid. in Sarg., Pl. Wilson. **3**: 162 (1916); Ohwi, Fl. Jap.: 407 (1953); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 475 (1965); Ohwi & Kitag., New Fl. Jap.: 541 (1992).

Salix saidaeana Seemen, Salic. Jap.: 68, tab. 17 (1903) [**Syntypes**: Japan. U. Faurie 4995, U. Faurie 3694, U. Faurie 3705, U. Faurie 3706 & U. Faurie 3708; J. Rein s.n. Apr. 1875. (B?), all n. v.]; C.K.Schneid. in Sarg., Pl. Wilson. **3**: 163 (1916).

Salix daisenensis Seemen, Salic. Jap.: 65, tab. 15 (1903) [**Type**: Japan. Honshu, Tottori Pref. (Prov. Hôki), Daisen, U. Faurie 3708 [3768] (♂ fl.), 25 May [25 mai], 1899 (KYO-isolecto. fide Kimura 1981)]; C.K.Schneid. in Sarg., Pl. Wilson. **3**: 129 (1916).

Salix harmsiana Seemen, Salic. Jap.: 73, tab. 18 (1903) [**Type**: Japan. Nagasaki. R. Oldham 551—anno 1862—n.v.]; C.K.Schneid. in Sarg., Pl. Wilson. **3**: 163 (1916); Ohwi, Fl. Jap.: 407 (1953); Ohwi, Fl. Jap. ed. rev.: 476 (1965); Sugaya in Terasaki. Illust.: 104, fig. 405 (1977); Ohwi & Kitag., New Fl. Jap.: 541 (1992).

Salix sieboldiana var. *sikokiana* Koidz. in Bot. Mag. Tokyo **27**: 93 (1913) [**Type**: Japan. Shikoku. Tokushima (Prov. Awa),

Tsurugisan. J. Nikai 2072 (fr.), 18 Jul. 1909 (TI lecto. designated by Kimura 1981)].

Salix vulpina var. *daiseniensis* (Seemen) Koidz. in Bot. Mag. Tokyo **27**: 90 (1913).

Salix propitia Koidz. in Bot. Mag. Tokyo **27**: 266 (1913); C.K.Schneid. in Sarg., Pl. Wilson. **3**: 163 (1916).

Salix tsukushiana Koidzumi in Bot. Mag. Tokyo **33**: 220 (1919) [**Type**: Japan. Kyushu. G. Koidzumi s.n. (♀ fl.), Mart. 1918 (TI holo.)].

Salix doiana Koidz. in Fl. Satsum. **2**: 103 (1931) & in Acta Phytotax. Geobot. **1**: 21 (1932) [**Type**: Japan. Kyushu, Kagoshima Pref. (Prov. Satsuma), Ijuuin. Y. Doi 9 (ster.), 12 Oct. 1928 (KYO-lecto. designated by Kimura 1981), (TUS-K isolecto)].

Salix aridaensis Koidz. in Acta Phytotax. Geobot. **8**: 111 (1939) [**Type**: Japan. Honshu, Wakayama Pref. (Prov. Kii), Aridagun, Yawatamura, Chikai, in Experim. For. Kyoto Univ. S. Okamoto (ster.), 22 Sept. 1938 (KYO lecto. designated by Kimura 1981; TUS-K isolecto)].

Salix daiseniensis var. *rotundifolia* Kimura in Bot. Mag. Tokyo **59**: 80 (1946) [**Type**: Japan. Shimane Pref. (Prov. Izumo), Torikamimura. I. Maruyama s.n. (fol.), 12 Aug. 1939 (TUS-K holo.)].

Salix daiseniensis f. *rotundifolia* (Kimura) Kimura in Ecol. Rev. **13**: 200 (1953).

Distr.: Endemic to Japan: Western Honshu (Kinki District and westward), Shikoku and Kyushu.

18. *Salix reinii* Seemen, Salic. Jap.: 41, tab. 6 (1903), as "*Salix reinii* Franch. & Sav." [Enum. Pl. Jap. **1**: 459 (1875), nom. nud. & l. c. **2**: 503 (1876), pro syn.] [**Type**: Nippon media. in monte Hak'san. Rein in Herb. Savatier 2923 & 2934 (P syn.-n.v.)]; Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. **7**: 158 (1995), as "*Salix reinii* Franch. & Sav. ex Seem."

Salix reinii Franch. & Sav.: Seemen, Salic. Jap.: 41 (1903); Koidz. in Bot. Mag.

Tokyo **17**: 91 (1913); Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6** (2): 189 (1931) & **15**: 412 (1940), Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 402 (1934); Makino, Illust. Fl. Nippon: 675, fig. 2023 (1940); Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 471 (1965); Skvortsov, Willows USSR: 152 (1968); Sugaya in Terasaki. Illust.: 101, tab. 393 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 318, fig. 772 (1979); T.Shimizu, New Alp. Fl. Jap. **2**: 114, fig. 323 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 46, photo 53, 1-4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 105 (1989); Ohwi & Kitag., New Fl. Jap.: 537 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 100 (1993).

Salix glabra auct. non Scopoli: Franch. & Sav., Enum. Pl. Jap. **2**: 503 (1876); Tokubuchi in Bot. Mag. Tokyo **10**: page (123) (1896).

Salix aequitriens Seemen in Bot. Jahrb. Syst. **21**: Beibl. **53**: 52 (1896) & Salic. Jap.: 70, tab. 15, figs. E-G (1903); Tokubuchi in Bot. Mag. Tokyo **10**: page (124) (1896).

Salix reinii f. *aomoriensis* Seemen, Salic. Jap.: 42 (1903); Kimura in Ecol. Rev. **13**: 199 (1953).

Salix reinii var. *cyclophylloides* Koidz. in Bot. Mag. Tokyo **27**: 91 (1913) [**Type**: Japan. Honshu, Iwate Pref. (Prov. Rikuchu), Iwatesan. G. Nakahara s.n. (fol. & fr.), 26 Jun. 1907 (TI lecto., designated by Kimura 1981)].

Salix kakista C.K.Schneid. in Sarg., Pl. Wils. **3**: 128 (1916) [**Type**: Japan. Hondo, Aomori Pref. (Prov. Mutsu), Hakkoda-yama, common, lower and middle slopes. E. H. Wilson 7103, 5 July 1914 (GH holo.)].

Salix hidewoi Koidz. in Bot. Mag. Tokyo **33**: 220 (1919) [**Type**: Japan. Hokkaido, Prov. Ishikari, Mt. Nutakkamshpe. G. Koidzumi s.n. (♀ fl.), Jul. 1916 (TI lecto. designated by A.Kimura 1981)]; Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo

26: 403 (1934); Ohwi, Fl. Jap.: 404 (1953); Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 472 (1965); Kimura in Wild Flow. Jap. Wood. 1: 46 (1989); Ohwi & Kitag., New Fl. Jap.: 537 (1992).

Salix reinii var. *eriocarpa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 6: 190 (1931) [**Type**: Japan. Honshu, Shizuoka Pref. (Prov. Suruga), Subashiri, pede montis Fujisan. A. Kimura 203 (♀ fl.), May 14, 1926 (TUS-K holo.)]; Ohwi & Kitag., New Fl. Jap.: 537 (1992).

Salix sachalinensis f. *aequitriens* (Seemen) Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 433 (1934).

Salix reinii f. *aomoriensis* subf. *cyclophylloides* (Koidz.) Kimura in Ecol. Rev. 13: 199 (1953).

Salix reinii f. *eriocarpa* (Kimura) T. Shimizu, New Alp. Fl. Jap. 2: 358 (1983); Kimura in Wild Flow. Jap. Wood. 1: 46 (1989).

Distr.: Japan: Hokkaido and Honshu (Central Districts and northward) and Far Eastern Russia: Kuriles, Primorye, Khabarovsk and Kamchatka.

18-1. *Salix reinii* f. *reinii*

18-2. *Salix reinii* f. *pendula* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 27: 145 (1961) [**Type**: Japan. Honshu, Shizuoka Pref. (Prov. Suruga), Subashiriguchi, pede montis Fujisan, ca. 970 m s.m. A. Kimura 194 (fol.), 5 Oct. 1924 (TUS-K holo.)]; Ohwi & Kitag., New Fl. Jap.: 537 (1992).

Distr.: Japan. Honshu. Shizuoka Pref.

IV-iii. Sect. *Helix* Dumortier

Salix sect. *Helix* Dumortier, Verh. Gesl. Wilgen: 15 (1825) & in Bijdr. Natuurk. Wetensch. 1: 56 (1826); C.K. Schneid. in Sarg., Pl. Wils. 3: 165 (1916); Nakai, Fl. Sylv. Kor. 18: 110 (1930); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. 1968: 70 (1968) & Willows USSR: 220 (1968), sub subgen. *Vetrix* Dumortier; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 305 (1979),

sub subgen. *Salix*; Argus in System. Bot. Monogr. 52: 90 (1997), sub subgen. *Vetrix* (Dumortier) Dumortier. **Type**: *Salix helix* L. (= *S. purpurea* L.).

Salix subgen. *Helice* (Dumortier) Dumortier in Bull. Soc. Roy. Bot. Belg. 1: 145 (1862).

Salix sect. *Purpurea* Koch, Syn. Fl. Germ. Helv. 2: 646 (1837); Newsholme, Willows: 26 (1992), as "sect. *Purpurea* Fries". **Type**: *Salix purpurea* L.

Salix sect. *Monandrae* Nakai in Bull. Soc. Dendrol. Fr. 66: 50 (1928). **Type**: *Salix purpurea* L.

19. *Salix miyabeana* Seemen in Bot. Jahrb. Syst. 21: Beibl. 53: 50 (1896) [**Type**: Japan. Hokkaido, Prov. Ishikari, Sapporo. Tokubuchi s.n. (♀ fl.), 23 Apr. 1890 (as 1891) (SAPT isolecto. designated by Kimura 1981)] & Salic. Jap.: 57, tab. 12 (1903); Tokubuchi in Bot. Mag. Tokyo 10: pages (125) & (339); Tokubuchi, l. c. 10: 69, pl. 6 (1896); C.K. Schneid. in Sarg., Pl. Wils. 3: 166 (1916); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 435 (1934); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 474 (1965); Skvortsov, Willows USSR: 228 (1968); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 312, fig. 764 (1979); Lauener & McKean in Notes RBG Edinb. 41: 177 (1983); Kimura in Wild Flow. Jap. Wood. 1: 49, photo 56, 5-7 (1989); Ohwi & Kitag., New Fl. Jap.: 540 (1992); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. 7: 189 (1995).

Salix sapporoensis H. Lévl. in Bull. Soc. Bot. Fr. 56: 302 (1909) [**Type**: Japan. Hokkaido, Sapporo. U. Faurie 266, 12 June 1908 (E lecto., n.v., designated by Lauener & McKean 1983)].

19-1. *Salix miyabeana* subsp. *miyabeana*

Distr.: Japan: Hokkaido, Korea, China [as *Salix linearistipularis* (Franch.) Hao: Chou in Fl. Reipub. Pop. Sin. 20 (2): 374. (1984)], East Russia: Far East Russia and Siberia

(map: Skv. fig. 62–4).

19-2. *Salix miyabeana* subsp. **gilgiana** (Seemen) H. Ohashi, comb. nov.

Salix gilgiana Seemen, Salic. Jap.: 59, tab. 13 (1903); C.K. Schneid. in Sarg., Pl. Wils. 3: 169 (1916); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 437 (1934); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 475 (1965); Skvortsov, Willows USSR: 230 (1968); Sugaya in Terasaki. Illust.: 104, tab. 402 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 312, fig. 765 (1979); Kimura in Wild Flow. Jap. Wood. 1: 49, photo 56, 1–4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 91 (1989); Ohwi & Kitag., New Fl. Jap.: 540 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 95 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. 7: 190 (1995).

Distr.: Japan: Southern Hokkaido and Honshu, northern Korea, China, and East Russia: Ussuri.

19-2-1. *Salix miyabeana* subsp. *gilgiana* f. **gilgiana** (Seemen) H. Ohashi, comb. nov.

19-2-2. *Salix miyabeana* subsp. *gilgiana* f. **pendula** (Kimura) H. Ohashi, comb. nov.

Salix gilgiana var. *pendula* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 20: 211 (1961) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura 3096 (♀ fl.), 16 Apr. 1953 (TUS-K lecto. designated by Kimura 1981)].

20. *Salix integra* Thunb. in Murray, Syst. Veg. ed. 14: 880 (1784), Fl. Jap.: 24 (1784) [**Type**: Japan, Thunberg (UPS holo.)] & Pl. Jap. Nov. Sp.: 4 (1824); Siebold & Zucc., Fl. Jap. Fam. Nat. 2: 211 (1846); Nakai, Fl. Sylv. Kor. 18: 113 (1930); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 434 (1934); Makino, Illust. Fl. Nippon: 672, fig. 2015 (1940); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 474 (1965); Skvortsov, Willows USSR: 229 (1968); Sugaya in Terasaki. Illust. rev. ed.: 103, tab.

400 (1977); Hatusima, Kagoshima-ken Shokubutsu Mokuroku: 35 (1978); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 310, fig. 762 (1979); Yamanaka in J. Jap. Bot. 59: 185 (1981); Kimura in Wild Flow. Jap. Wood. 1: 48, photo 55, 1–4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 94 (1989); Ohwi & Kitag., New Fl. Jap.: 540 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 99 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. 7: 189 (1995).

Salix purpurea auct. non L.: Miq. in Ann. Mus. Bot. Lugd.-Bat. 3: 26 (1867) & Prol. Fl. Jap.: 214 (1867); Franch. & Sav., Enum. Pl. Jap. 1: 462 (1875); C.K. Schneid. in Sarg., Pl. Wils. 3: 167 (1916), p.p.

Salix multinervis Franch. & Sav., Enum. Pl. Jap. 2: 504 (1876).

Salix purpurea var. *multinervis* (Franch. & Sav.) Matsum., Shokubutsu Meii: 261 (1895); Seemen, Salic. Jap.: 54, tab. 11 (1903); C.K. Schneid. in Sarg., Pl. Wils. 3: 168 (1916), as “*S. purpurea* subsp. *amplexicaulis* var. *multinervis*”.

Salix purpurea L. subsp. *amplexicaulis* auct. non (Bory & Chaub.) Boissier: Koidz. in Bot. Mag. Tokyo 27: 92 (1913).

Distr.: Japan: Hokkaido, Honshu and Kyushu, Korea, E. & NE. China and Far East Russia: Ussuri and Kuril: Etorohu. Wet ground or riverside.

20-1. *Salix integra* f. **integra**

20-2. *Salix integra* f. **pendula** Kimura in J. Jap. Bot. 57: 161, figs. 1–2 (1982) [**Type**: Japan. Prov. Shinano, declivi in loco graminoso-herboso, ca. 1200 m s.m. in Nagawamura-Oidaira. A. Kimura 3429 (fol.), 24 Aug. 1978 (TUS-K holo.)].

Japan. Nagano Pref.

21. **Salix koriyanagi* Kimura ex Görz, Schedae ad fasc. I. Salicac. Asiat.: 17 (1931) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura 1931 (fol.), 3 Jul. 1930 (TUS-K lecto. designated

by Kimura 1981)] & in Fedde, Repert. **32**: 119, 388 (1933); H.Hara in Bot. Mag. Tokyo **48**: 799 (1934); Makino, Illust. Fl. Nippon: 672, fig. 2014 (1940); Ohwi, Fl. Japan: 406 (1953); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **20**: 209 (1954) & l.c. **28**: 42 (1962); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 474 (1965); Skvortsov, Willows USSR: 226 (1968); Sugaya in Terasaki. Illust.: 103, tab. 401 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 311, fig. 763 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 49, photo 55, 5–7 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 93 (1989); Ohwi & Kitag., New Fl. Jap.: 540 (1992).

Salix purpurea L. subsp. *amplexicaulis* (Bory & Chaub.) Koidz. var. *petiolata* subvar. *angustifolia* Koidz. in Bot. Mag. Tokyo **27**: 92 (1913).

Salix purpurea var. *japonica* Nakai in Bull. Soc. Dendr. Fr. **66**: 50 (1928) [**Type**: Korea. Heihok, Teisyu. T. Ishidoya no. 3838 (fr.), 2 May 1920 (TI, lecto. designated by Nakai, 1930)] & Nakai, Fl. Sylv. Kor. **18**: 117 (1930).

Salix purpurea auct. Japon., non L.: Seemen, Salic. Jap.: 54, tab. 11 (1903), excl. syn.; Matsum., Index Pl. Jap. **2**: 12 (1912), p.p.

Distr.: Japan (cultivated) and Korea.

IV-iv. Sect. **Incubaceae** A.Kerner

Salix sect. **Incubaceae** A.Kerner in Verh. Zool.-Bot. Ges. Vereins Wien **10**: 264 (1860); C.K. Schneid. in Sarg., Pl. Wils. **3**: 153 (1916); Nakai, Fl. Sylv. Kor. **18**: 157 (1930); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 70 (1968) & Willows USSR: 216 (1968), sub subgen. *Vetrix*; Newsholme, Willows: 25 (1992). **Type**: *Salix repens* L.

Salix sect. *Repentes* Wimmer: Pax in Engler & Prantl, Nat. Pflanzenfam. **3**, **1**: 37 (1887), p.p.; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), sub subgen. *Salix*. **Type**: *Salix repens* L.

22. Salix subopposita Miq. in Ann. Mus. Bot. Lugd.-Bat. **3**: 28 (1867) [**Type**: legit Siebold, qui pro *S. integra* Th. habuit; Pierot in montibus Hakone ins. Nippon ad ripas rivulorum utrumque exum et folia legit.-Kuro Janagi isp.]; Nakai, Fl. Sylv. Kor. **18**: 160, tab. 37 (1930); Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 471 (1965); Sugaya in Terasaki. Illust.: 101, tab. 392 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 315, fig. 769 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 44, photo 50, 5–7 (1989); Ohwi & Kitag., New Fl. Jap.: 536 (1992).

Distr.: Japan: W. Honshu (Chugoku Dist.), NW. Shikoku, N. Kyushu and South Korea (Quelpaert Isl.).

IV-v. Sect. **Subviminales** (Seemen)

C.K.Schneid.

Salix sect. **Subviminales** (Seemen) C.K.Schneid., Illust. Handb. Laubholzk. **1**: 65 (1904); Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 69 (1968) & Willows USSR: 201 (1968), sub subgen. *Vetrix* Dumortier; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), sub subgen. *Salix*; Newsholme, Willows: 25 (1992), sub subgen. *Caprisalix*. **Type**: *Salix gracilistyla* Miq.

Salix [unranked] *Subviminales* Seemen in Salic. Jap.: 20 (1903), sub *Salix* C. Monadeniae b. *Synandrae* β. *Dolichostylae*. **Type**: *Salix gracilistyla* Miq.

Salix sect. *Gracilistylae* C.K.Schneid. in Sarg., Pl. Wils. **3**: 163 (1916); Nakai, Fl. Sylv. Kor. **18**: 100 (1930). **Type**: *Salix gracilistyla* Miq.

23. Salix gracilistyla Miq. in Ann. Mus. Lugd.-Bat. **3**: 26 (1867) & Prol. Fl. Jap.: 214 (1867); Tokubuchi in Bot. Mag. Tokyo **10**: page (124) (1896); Koidz. in Bot. Mag. Tokyo **27**: 92 (1913); C.K.Schneid. in Sarg., Pl. Wils. **3**: 164 (1916); Nakai, Fl. Sylv. Kor. **18**: 104 (1930); Makino, Illust. Fl. Nippon:

671, fig. 2012 (1940); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 475 (1965); Skvortsov, Willows USSR: 201 (1968); Sugaya in Terasaki. Illust.: 104, tab. 403 (1977); Hatusima, Kagoshima-ken Shokubutsu Mokuroku: 35 (1978); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 308, fig. 761 (1979); Kimura in Wild Flow. Jap. Wood. 1: 50, photo 57, 1-4 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 90 (1989); Ohwi & Kitag., New Fl. Jap.: 540 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 95 (1993); Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. 7: 187 (1995).

Salix thunbergiana Bl. ex Andersson in DC., Prodr. 16 (2): 271 (1868); Seemen, Salic. Jap.: 61, tab. 14 (1868).

23-1. *Salix gracilistyla* var. **gracilistyla**
23-1-1. *Salix gracilistyla* var. *gracilistyla* f. **gracilistyla**

Distr.: Japan: Hokkaido, Honshu, Shikoku and Kyushu, Korea and North & NE. China.

23-1-2. *Salix gracilistyla* var. *gracilistyla* f. **adscendens** (Kimura) H.Ohashi, comb. nov.

Salix gracilistyla var. *adscendens* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 12: 107 (1937) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai. A. Kimura 3042 (♂ fl.), 11 Mar. 1949 (TUS-K lecto. designated by A. Kimura 1981)].

Salix gracilistyla var. *adscendens* f. *latifolia* Kimura Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 26: 4, tab. 3 (1960) [**Type**: Japan. Honshu, Tochigi Pref. (Prov. Shimotuke), secus torrentem Nigatogawa, in Imperiali Praedio Rustico Nasuensi, altitudine circa 660 m s.m. A. Kimura 927 (fol.), 18 Aug. 1956 (TUS-K holo.)].

23-1-3. *Salix gracilistyla* var. *gracilistyla* f. **pendula** (Kimura) H.Ohashi, stat. nov.

Salix gracilistyla var. *pendula* Kimura in Bot. Mag. Tokyo 42: 570 (1928) [**Type**: Japan. Honshu, Tochigi Pref. (Prov. Shimotsuke), Utsunomiya, cult. A. Kimura

1254 (♂ fl.), 22 Mar. 1927 (TUS-K holo.)].

23-1-4. *Salix gracilistyla* var. *gracilistyla* f. **variegata** (Kimura) Kimura in Ecol. Rev. 13: 200 (1953).

Salix gracilistyla var. *variegata* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 12: 107 (1937). [**Type**: Japan. Honshu, Miyagai Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura 2409 (TUS-K)].

Distr.: Cultivated.

23-2. *Salix gracilistyla* var. **graciliglans** (Nakai) H.Ohashi, comb. nov.

Salix graciliglans Nakai in Bot. Mag. Tokyo 30: 274 (1916) [**Type**: Korea. Heihoku, Kang-gei [Kangkai]. Ralph G. Mills 312 (♀ fl.), 28 Apr. 1911 (TI lecto. designated by Nakai 1930)] & Fl. Sylv. Kor. 18: 102 (1930); Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 475 (1965); Ohwi & Kitag., New Fl. Jap.: 541 (1992).

Salix nakaii Kimura in Bot. Mag. Tokyo 40: 637 (1926) [**Type**: Japan. Honshu, Tokyo, (Prov. Musashi), cult. in horto Bot. Univ. Imp. Tokyo. A. Kimura 371 (♂ fl.), 25 Feb. 1926 (TI holo.)].

Distr. Japan: Honshu (Kinki Dist. and westward), Shikoku, and N. Kyushu and Korea.

23-3. *Salix gracilistyla* var. **melanostachys** (Makino) C.K.Schneid. in Sarg., Pl. Wils. 3: 164 (May 1916); Makino ex Matsum., Shokubutsu-meii, ed. 9: 353 (June 1916); Ohwi, Fl. Jap.: 407 (1953) & in Bull. Nat. Sci. Mus. no. 33: 70 (1953), as var. *melanostachys* (Makino) Ohwi; Ohwi, Fl. Jap. ed. Engl.: 368 (1965) & Fl. Jap. ed. rev.: 475 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 309 (1979); Kimura in Wild Flow. Jap. Wood. 1: 50, photo 57, 5 (1989).

Salix thunbergiana var. *melanostachys* Makino in Bot. Mag. Tokyo 18: 141 (1904) [**Type**: Japan. Honshu, Tokyo Pref. (Prov. Musashi), Tokyo, Bot. Gard. Koishikawa, cult. S. Okubo 36 (♂ fl.), March. anno? (TI lecto. designated by A. Kimura 1981)].

Salix gracilistyla subsp. *melanostachys* (Makino) Makino in Bot. Mag. Tokyo **28**: 175 (1914); Makino & Nemoto, Fl. Japan ed. 2: 164 (1931).

Salix melanostachys Makino ex Görz, Schedae ad fasc. I. Salicac. Asiatic.: 21 (1931) & in Repert. Sp. Nov. Reg. Veg. **32**: 121 (1933); Kimura in Sci. Rep. Tohoku Imp. Univ. **15**: 414 (1940); Sugaya in Terasaki. Illust.: 104, fig. 404 (1977).

Distr.: Cultivated rarely in gardens.

IV-vi. Sect. **Hukaoana** Kimura

Salix sect. **Hukaoana** Kimura in J. Jap. Bot. **49**: 46 (1974); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 305 (1979), sub subgen. *Salix*. **Type**: *Salix hukaoana* Kimura.

24. *Salix hukaoana* Kimura in J. Jap. Bot. **48**: 321, fig. 1 (1973) [**Type**: Japan. Prov. Kôzuke, secus torrentem Yubisogawa, Yubiso, altitudine circa 560 m s.m. A. Kimura & S. Hukao (♀ fl. sub anth.), 14 Apr. 1973 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 309 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 51, photo 58, 1–4 (1989); Ohwi & Kitag., New Fl. Jap.: 539 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 117 (1993).

Distr.: Endemic to Japan: Honshu (Northern Kantô and Tôhoku Districts).

IV-vii. Sect. **Daphnella** Seringe

Salix sect. **Daphnella** Seringe, Exemplaires desséchés de la révision inédit du genre *Salix*, 10th page [no pagination] (1824) [cf. Argus in System. Bot. Monogr. **52**: 5 (1997)]; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 69 (1968) & Willows USSR: 211 (1968), sub subgen. *Vetrix* Dumortier; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 306 (1979), sub subgen. *Salix*; Chou in Fl. Reipub. Pop. Sin. **20** (2): 311 (1984). **Type**: *Salix daphnoides*

Vill.

Salix sect. *Daphnoideae* Dumortier, Fl. Belg. Prodr.: 12 (1827) & in Bull. Soc. Bot. Belg. **1**: 143 (1862); C.K.Schneid. in Sarg., Pl. Wils. **3**: 154 (1916); Nakai, Fl. Sylv. Kor. **18**: 91 (1930); Newsholme, Willows: 25 (1992).

25. *Salix rorida* Lacksch. in Sched. Herb. Fl. Ross. **7**: 131 (1911); Miyabe & Kudo, Icon. Ess. For. Tr. Hokkaido **5**: 55, tab. 16 (1921); Nakai, Fl. Sylv. Kor. **18**: 92 (1930); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 473 (1965); Skvortsov, Willows USSR: 214 (1968); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 319, fig. 773 (1979); Kimura in J. Jap. Bot. **58**: 129 (1983) & in Wild Flow. Jap. Wood. **1**: 43, photo 49, 1–6 (1989); Chou in Fl. Reipub. Pop. Sin. **20** (2): 313 (1984); Ohwi & Kitag., New Fl. Jap.: 538 (1992); Nedoluzhko in Charkevicz, Pl. Vascul. Ori. Extr. Soviet. **7**: 158 (1995).

Salix lackschewitziana Toepfer, Osterr. Bot. Zeits. **66**: 402 (1916); Kimura in Sci. Rep. Tohoku Imp. Univ. **6**: 185 (1931), as var. *typica* Kimura & Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 428 (1934).

Salix daphnoides auct., non Vill.: Ledeb., Fl. Ross. **3** (2): 602 (1850), p. p.; Tokubuchi in Bot. Mag. Tokyo **10**: page (123) (1896); C.K.Schneid., Illust. Handb. Laubh. **1**: 44 (1904), p. p.; Shirasawa, Icon. Ess. For. Trees Jap. 2: tab. 10 (1908); Matsum., Ind. Pl. Jap. **2** (2): 9 (1912).

Distr.: Japan: Hokkaido and Honshu, Korea, NE. China and East Russia: Amur, Primorye, Khabarovsk, Magadan, Sakhalin and Siberia.

25-1. *Salix rorida* f. **rorida**

25-2. *Salix rorida* f. **pendula** Kimura in J. Jap. Bot. **58**: 132 (1983) [**Type**: Japan. Miyagi Pref. (Prov. Rikuzen). cult. in Horto Bot. Fac. Sci. Tohoku Univ. Sendaiensis. A. Kimura 3442 (fol.), 6 Sept. 1982 (TUS-K)]

& **59**: 4 (1984).

Distr.: Cultivated in Japan, Honshu, Miyagai Pref., Sendai.

25-3. *Salix rorida* f. **roridaeformis** (Nakai) Kimura [in Wild Flow. Jap. Wood. **1**: 43 (1989), comb. nud.; Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 106 (1993)] ex H.Ohashi, comb. nov.

Salix roridaeformis Nakai in Bot. Mag. Tokyo **33**: 5 (1919) [**Type**: Korea. Kannan, Taichu-ri. T. Ishidoya 2738 (♀ fl.), 22 May 1918 (TI lecto. designated by Nakai 1930)] & Fl. Sylv. Kor. **18**: 96 (1930).

Salix lackschewitziana var. *roridaeformis* (Nakai) Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6**: 187 (1931).

Salix rorida var. *roridaeformis* (Nakai) Ohwi, Fl. Jap.: 405 (1953) & in Bull. Nat. Sci. Mus. no. **33**: 70 (1953); Ohwi, Fl. Jap. ed. Engl.: 367 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 319 (1979), ut “var. *roridaeformis* (Nakai) Kimura”; Chou in Fl. Reipub. Pop. Sin. **20** (2): 313 (1984); Ohwi & Kitag., New Fl. Jap.: 539 (1992).

Distr.: Japan, as in the species.

IV-viii. Sect. **Viminella** Seringe

Salix sect. **Viminella** Seringe, Exemplaires desséchés de la révision inédit du genre *Salix*, 10th page [no pagination] (1824); Argus in System. Bot. Monogr. **52**: 83 (1997), sub subgen. *Vetrix* (Dumortier) Dumortier. **Type**: *Salix viminalis* L.

Salix sect. *Vimen* (Seringe) Dumortier, Verh. Gesl. Wilgen: 14 (1825) & in Bijdr. Natuurk. Wetensch. **1**: 56 (1826), p.p.; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 69 (1968) & Willows USSR: 191 (1968), sub subgen. *Vetrix* Dumortier; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 306 (1979), sub subgen. *Salix*. **Type**: *Salix viminalis* L.

Salix [unranked] *Viminales* Bluff & Fingerhuth, Cimp. Fl. Germ. **2**: 256 (1825).

Salix sect. *Viminales* Bluff & Fingerhuth: W. Koch, Syn. Fl. Germ.: 647 (1837);

C.K.Schneid. in Sarg., Pl. Wils. **3**: 157 (1916); Nakai, Fl. Sylv. Kor. **18**: 174 (1930); Newsholme, Willows: 25 (1992). **Type**: *Salix viminalis* L.

Salix subgen. *Vimen* (Seringe) Dumortier in Bull. Soc. Roy. Bot. Belg. **1**: 143 (1862).

26. **Salix schwerinii** E. Wolf in Mitt. Deutsch. Dendrol. Ges.: 407 (1929) & in Bull. Jard. Bot. Princ. URSS **28**: 421 (1929); Skvortsov, Willows USSR: 196 (1968); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 183 (1995).

Salix viminalis auct. non L.: Sugiyama, Hokkaido-Zyumokusiryo n. 158 (1890), fide Kimura 1937; Tokubuchi in Bot. Mag. Tokyo **10**: page (124) (1896); Seemen, Salic. Jap.: 50, tab. 9, F–K (1903); Miyabe & Miyake, Fl. Saghal.: 428 (1915); Nakai, Fl. Sylv. Kor. **18**: 175 (1930).

Salix viminalis L. var. *yezoensis* C.K.Schneid. in Sarg., Pl. Wilson. **3**: 158 (1916); Miyabe & Kudo, Icon. Ess. For. Tr. Hokkaido **1**: 58, tab. 17 (1921); Makino & Nemoto, Fl. Jap. ed. 2: 173 (1931).

Salix yezoensis (C.K.Schneid.) Kimura in Bot. Mag. Tokyo **45**: 28 (1931) & in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6**: 190 (1931); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 430 (1934); Nemoto, Fl. Jap. Suppl.: 118 (1936); Makino, Illust. Fl. Nippon: 674, fig. 2020 (1940).

Salix yezoensis var. *angustifolia* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6**: 194 (1931) [**Type**: Sachalin. Distr. Sikka, Siska. A. Kimura 1541 (fol.), 21 Aug. 1927 (TUS-K holo.)].

Salix yezoensis var. *abbreviata* Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26**: 431 (1934) [**Type**: Japan. Hokkaido, Prov. Tokati, Satsunai. M. Tatewaki 10483 (fol.), 3 Aug. 1927 (SAPT holo. TUS-K iso.)].

Salix serotina Pallas var. *yezoensis* Kimura ex Görs in Repert. Spec. Nov. Regni Veg. **36**: 26 (1934).

Salix petsusu Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 317 (1937), as “*S. Pet-susu*” & in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **18**: 548 (1950); Ohwi, Fl. Jap. ed. Engl.: 367 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 320, fig. 775 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 42, photo 48, 4–5 (1989); Ohwi & Kitag., New Fl. Jap.: 539 (1992).

Salix petsusu var. *abbreviata* (Kimura) Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 318 (1937).

Salix petsusu var. *angustifolia* (Kimura) Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 318 (1937).

Salix kinuyanagi Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **15**: 401 (1940) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura n. 2192 (♂ fl.), 11 Apr. 1933 (TUS-K lecto.)]; Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 473 (1965); Sugaya in Terasaki. Illust.: 103, tab. 398 (1977); Kitamura & Murata, Col. Illust. Woody Pl. Jap. **2**: 320, fig. 774 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 43, photo 48, 6–7 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 102 (1989); Ohwi & Kitag., New Fl. Jap.: 539 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 99 (1993).

Salix petsusu f. *angustifolia* (Kimura) Kimura in Ecol. Rev. **13**: 200 (1953).

Salix kinuyanagi mstr. *ligulata* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **27**: 143, tab. 9 (1961). Specimen cited: Japan. Honshu, Shizuoka Pref. (Prov. Tôtômi), Hamanagun, cult., sine loco speciali indicato. E. Isikawa s.n. (♂), Mar. 1940 (TUS-K)].

Distr.: Japan: Hokkaido and Honshu (central and northern regions, cultivated in Honshu, Shikoku and Kyushu), Korea, NE. China and East Russia: Siberia, Amur, Khabarovsk, Primorye, Sakhalin, Kamchatka and Magadan.

27. *Salix udensis* Trautv. & Mey., Fl. Ochot.: 81 (1856); Skvortsov, Willows USSR: 200 (1968); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 181 (1995).

Salix sachalinensis F.Schmidt in Mém. Acad. Imp. Sci. St. Pétersb. ser. 7, **12**: 173 (1868); Tokubuchi in Bot. Mag. Tokyo **10**: page (124) (1896); Seemen, Salic. Jap.: 53, tab. 10 (1903); C.K.Schneid. in Sarg., Pl. Wils. **3**: 158 (1916); Miyabe & Kudo, Icon. Ess. For. Trees Hokkaido **1**: 59, tab. 18 (1921); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo **26**: 431 (1934); Makino, Illust. Fl. Nippon: 673, fig. 2019 (1940); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **27**: 141 (1961); Ohwi, Fl. Jap.: 406 (1953); Kurata, Illust. Imp. For. Tr. Jap. **1**: 54, pl. 27 (1964); Ohwi, Fl. Jap. ed. Engl.: 367 (1965) & Fl. Jap. ed. rev.: 474 (1965); Sugaya in Terasaki. Illust.: 103, tab. 399 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 321, fig. 776 (1979); Chou in Fl. Reipub. Pop. Sin. **20** (2): 326 (1984); Mizuno & al. in Bot. Mag. Tokyo **102**: 403 (1989) [chemotaxonomy*]; Kimura in Wild Flow. Jap. Wood. **1**: 42, photo 48, 1–3 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 101 (1989); Ohwi & Kitag., New Fl. Jap.: 539 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 106 (1993).

[*Salix sikokiana* Makino in Bot. Mag. Tokyo **6**: 49 (1892), nom. nud. Specimen cited: Japan. Tosa, Nanokawa. K. Watanabe s.n.].

Salix opaca Andersson [in Tokubuchi in Bot. Mag. Tokyo **10**: page (124) (1896)] ex Seemen, Salic. Jap.: 51, tab. 10 (1903); Shirasawa, Icon. Forest Tr. Jap. **2**: tab. 9 (1908).

Salix makinoana Seemen in Repert. Sp. Nov. Reg. Veg. **1**: 173 (1905), p. p.

Salix pilgeriana Seemen in Repert. Sp. Nov. Reg. Veg. **7**: 134 (1909).

Salix sachalinensis var. *pilgeriana* (Seemen) C.K.Schneid. in Sarg., Pl. Wils. **3**:

159 (1916).

Salix sachalinensis f. *latior* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **27**: 141 (1961) [**Type**: Japan. Honshu, Tokyo (Prov. Musashi), ad fossam Dokanbōri in Sede Imperatoris Augustissimi Tokiensis. A. Kimura 965 (fol. intermed.), 24 May 1957 (TUS-K holo.)].

Salix sachalinensis f. *ligulata* Kimura in J. Jap. Bot. **36**: 163 (1961) [**Type**: Japan. Hokkaido, Prov. Kushiro, in paludosis Kiritappu, spontanea. A. Kimura 2000 (str.), 21 May 1931 (TUS-K holo.)] & in Sci. Rep. Tohoku Univ. 4 ser. Biol. **27**: 142, tab. 6–8 (1961), as “mstr. *ligulata* Kimura”.

Distr.: Japan: Hokkaido, Honshu and Shikoku, Korea, NE. China and East Russia: Siberia, Amur, Primorye, Khabarovsk, Kuril, Sakhalin, Kamchatka and Magadan.

*Two different chemical races were found in this species in Japan; one composed of flavonoids and the other phenylpropanoid derivatives (Mizuno & al. 1989).

IV-ix. Sect. *Cinerella* Seringe

Salix sect. *Cinerella* Seringe, Exemplaires desséchés de la révision inédit du genre *Salix*, 2nd page [no pagination] (1824); Argus in System. Bot. Monogr. **52**: 74 (1997), sub subgen. *Vetrix* (Dumortier) Dumortier. **Type**: *Salix cinerea* L.

Salix sect. *Vetrix* Dumortier, Verh. Gesl. Wilgen: 14 (1825) & in Bijdr. Natuurk. Wetensch. **1**: 56 (1826), p. p.; Skvortsov in Acad. Sci. URSS Nov. Syst. Pl. **1968**: 67 (1968) & Willows USSR: 157 (1968), sub subgen. *Vetrix* (Dumortier) Dumortier; Chou in Fl. Reipub. Pop. Sin. **20** (2): 293 (1984). **Type**: *Salix caprea* L.

Salix [unranked] *Capreae* Bluff & Fingerhuth, Comp. Fl. Germ. **2**: 565 (1825); Dumortier, Fl. Belg. Prodr.: 11 (1828).

Salix cohors *Capreae* Koch, Salic. Eur.: 11 (1828); Nakai, Fl. Sylv. Kor. **18**: 122 (1930).

Salix sect. *Capreae* (Bluff & Fingerhuth)

Koch, Syn. Fl. Germ. Helv. **2**: 650 (1837); C.K.Schneid. in Sarg., Pl. Wils. **3**: 148 (1916), p. p., as “*Capreae* Bluff & Fingerhuth”; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 305 (1979), sub subgen. *Salix*. **Type**: *Salix caprea* L.

Salix sect. *Vetrix* Dumortier, Verh. Gesl. Wilgen: 14 (1825); Newsholme, Willows: 25 (1992), p. p. incl. sect. *Capreae*.

Salix subgen. *Caprisalix* (Dumortier) Nasarov in Fl. URSS **5**: 57 (1936). **Type**: *Salix caprea* L.

28. *Salix taraikensis* Kimura in J. Fac. Agric. Hokkaido Imp. Univ. **26**: 419 (1934) [**Type**: Sachalin australis. Shikka, Siska. A. Kimura 6718 (♀ fl.), 7 June 1927 (TUS-K lecto. designated by Kimura, 1981)]; Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 471 (1965); Skvortsov, Willows USSR: 175 (1968); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 317, fig. 771 (1979); Kitag., Neo-Lineam. Fl. Mansh.: 210 (1979); Chou in Fl. Reipub. Pop. Sin. **20** (2): 296 (1984); Kimura in Wild Flow. Jap. Wood. **1**: 43, photo 50, 1–4 (1989); Ohwi & Kitag., New Fl. Jap.: 536 (1992); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 175 (1995).

Salix taraikensis var. *latifolia* Kimura in J. Fac. Agric. Hokkaido Imp. Univ. **26**: 421 (1934) [**Type**: Japan. Hokkaido, Prov. Kushiro, Hamanaka. A. Kimura 2005 (fol.), 22 Jul. 1931 (TUS-K holo. & iso.)]; Chou in Fl. Reipub. Pop. Sin. **20** (2): 297 (1984).

Salix taraikensis f. *latifolia* (Kimura) Kimura in Ecol. Rev. **13**: 200 (1953).

Distr.: Japan: Hokkaido (Kushiro and Nemuro Prov.), China and East Russia: Primorye, Khabarovsk, Sakhalin, Amur and Siberia.

29. *Salix caprea* L., Sp. Pl.: 1020 (1753); Tokubuchi in Bot. Mag. Tokyo **10**: page (123) (1896); Miyabe, Fl. Kuril. Isl.: 260 (1890); Seemen, Salic. Jap.: 33, tab. 6

(1903); C.K.Schneid. in Sarg., Pl. Wils. 3: 149 (1916); Miyabe & Kudo, Icon. Ess. Forest Tr. Hokkaido 1: 57, tab. 15 (1921); Rech. f. in Fl. Europ. 1: 50 (1964); Skvortsov, Willows USSR: 166 (1968); Kitag., Neo-Lineam. Fl. Mansh.: 204 (1979); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 108 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. 7: 176 (1995).

Salix hultenii Flod. in Arkiv Bot., Stockh. 20A: no. 6, 51 (1926); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 414 (1934); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 316 (1979); Kimura in Wild Flow. Jap. Wood. 1: 42 (1989).

Salix bakko Kimura in Bot. Mag. Tokyo 42: 568, fig. 1 (1928) [**Type**: Japan, Honshu, Kanagawa Pref. (Prov. Sagami), Hakone, A. Kimura 571 (♀ fl.), 12 Apr. 1927 (TUS-K holo.)]; Makino & Nemoto, Fl. Jap. ed. 2: 162 (1931); Kimura in J. Fac. Agric. Hokkaido Imp. Univ. Sapporo 26: 417 (1934); Makino, Illust. Fl. Nippon: 673, fig. 2017 (1940); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 470 (1965); Kurata, Illust. Imp. For. Tr. Jap. 3: 4, pl. 2 (1971); Sugaya in Terasaki, Illust.: 101, tab. 390 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 317, fig. 770 (1979); Chou in Fl. Reipub. Pop. Sin. 20 (2): 301 (1984); Kimura in Wild Flow. Jap. Wood. 1: 42, photo 47, 1–5 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 97 (1989); Ohwi & Kitag., New Fl. Jap.: 536 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 40: 94 (1993).

Salix hultenii var. *angustifolia* Kimura in J. Fac. Agric. Hokkaido Imp. Univ. 26: 415 (1934) [**Type**: Kamtschatka. ad urb. Petropaulowsk. Y. Kobayashi s.n. (fol.), 15 Aug. 1931 (TI holo.)]; Ohwi, Fl. Jap.: 403 (1953); Ohwi, Fl. Jap. ed. Engl.: 365 (1965) & Fl. Jap. ed. rev.: 470 (1965); Ohwi & Kitag., New Fl. Jap.: 536 (1992).

Salix hultenii f. *angustifolia* (Kimura)

Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 28: 42 (1962).

[*Salix bakko* f. *angustifrons* (Koidz.) Sugimoto, New Keys Jap. Tr.: 101 (1961), comb. nud.].

Salix caprea f. *subglabra* (Chang & Skv.) Kitag., Neo-Lineam. Fl. Mansh.: 204 (1979).

Distr.: Japan: Hokkaido, Honshu (Kinki District and eastward) and Shikoku, Korea, Russia and Europe.

Note: According to Flora Europaea (1993, p. 55), *Salix caprea* is characterized in the key as “Leaves 1.5–2 times as long as wide, ovate or obovate to ovate-oblong; no ridges beneath the bark.” In the description (p. 61), *S. caprea* is characterized as “decorticated wood without ridges, and leaves 5–10 cm, 1.5–2 times as long as wide,” and “leaves usually broadly ovate to ovate to ovate-oblong, rounded at the base,.....; lateral veins 6–9 pairs, forming almost a right angle with the midrib.” Kimura (1928), in the original description of *Salix bakko*, pointed out that “Affinis *S. capreae* L. et *S. cinereae* L., sed a prima praecipue foliis angustioribus plurinervatis, ligno nudo vibicibus instructis,..... facile distinguitur.” In his description, leaves are 8.7–13 cm long and, 3.5–4.1 cm broad with 10–13 nerves, and showed a clear photo of ridges on decorticated wood. *Salix hultenii* is intermediate between *S. caprea* and *S. bakko*. It is distributed in Hokkaido, Kamchatka, Sakhalin and southern Kurile Islands. This species has broadly elliptic or elliptic leaves with acute or obtuse apex, rounded or slightly cordate base. Decorticated wood with or without ridges. *Salix caprea* and *S. bakko* seems to be a geoclineal form of one species. Skvortsov (1968) treated *S. bakko* as a synonym of *S. caprea*. His treatment is supported in this paper.

30. *Salix futura* Seemen, Salic. Jap.: 71, tab. 17, fig. F-G (1903); Kimura in Sci. Rep.

Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 73 (1938); Ohwi, Fl. Jap. ed. Engl.: 366 (1965) & Fl. Jap. ed. rev.: 472 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 322, fig. 77 (1979); Nova Fl. Nasu. Suppl.: 113, figs. 57–60 (1985); Kimura in Wild Flow. Jap. Wood. **1**: 44, photo 51, 4–6 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 96 (1989); Ohwi & Kitag., New Fl. Jap.: 537 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 94 (1993).

Salix vulpinoides Koidz. in Bot. Mag. Tokyo **27**: 94 (1913) [**Type**: Japan. Honshu, Gumma Pref. (Prov. Kôzuke). Collector unknown (fr.), 4 May 1888 (TI lecto. designated by Kimura 1981)].

Salix vulpina var. *tomentosa* Koidz. in Bot. Mag. Tokyo **27**: 265 (1913) [**Type**: Japan. Honshu, Ishikawa Pref. (Prov. Kaga), Kanazawa [Kanazawa-hukin]. T. Ichimura s.n. (fr.), (TI lecto. designated by Kimura 1981)]; Sugimoto, New Keys Jap. Tr.: 106 (1961).

Salix futura Seemen var. *psilocarpa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **11**: 247 (1936) [**Type**: Japan. Honshu, Fukushima Pref. (Prov. Iwaki), Kosekimura. A. Kimura 884 (♀ fl.), 23 Apr. 1934 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 322 (1979); Ohwi, Fl. Jap. ed. Engl.: 366 (1965); Ohwi & Kitagawa, New Fl. Jap.: 537 (1992).

Distr.: Endemic to Japan: Honshu (Southern Tôhoku to Kinki District).

30-1. *Salix futura* f. **futura**

30-2. *Salix futura* f. **rufa** (Kimura) H. Ohashi, stat. nov.

Salix futura Seemen var. *rufa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 73, fig. 2 (1938) [**Type**: Japan, Honshu, Fukui Pref. (Prov. Etizen), Shimeimura-Mizuoti, Y. Hori 23 (fol.), 28 Aug. 1937 (TUS-K holo.)].

Distr.: Japan: Honshu (Toyama and Fukui Prefectures).

31. *Salix vulpina* Andersson in Mem. Am. Acad. Arts Sci. n. s. **6**: 452 (1859); Franch. & Sav., Enum. Pl. Jap. **1**: 461 (1875); Tokubuchi in Bot. Mag. Tokyo **10**: page (128) (1896); Kawakami in Bot. Mag. Tokyo **10**: 50 (1896); Seemen, Salic. Jap.: 37, tab. 5 (1903); Koidz. in Bot. Mag. Tokyo **27**: 89 & 264 (1913); Schneid. in Sarg., Pl. Wils. **3**: 130 (1916); Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26**: 404 (1934); Makino, Illust. Fl. Nippon: 672, fig. 2016 (1940); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **23**: 9, figs. 2–3, tab. 3 (1957); Ohwi, Fl. Jap. ed. Engl.: 336 (1965) & Fl. Jap. ed. rev.: 472 (1965); Skvortsov, Willows USSR: 165 (1968); Sugaya in Terasaki. Illust.: 102, fig. 395 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 323, fig. 779 (1979); Lauener & McKean in Notes RBG Edinb. **41**: 178 (1983); Kimura in Wild Flow. Jap. Wood. **1**: 45, photo 51, 1–3 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 95 (1989); Ohwi & Kitag., New Fl. Jap.: 537 (1992); Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 111 (1993); Nedoluzhko in Charkevich, Pl. Vascul. Ori. Extr. Soviet. **7**: 173 (1995).

Salix vulpina var. *discolor* Seemen, Salic. Jap.: 40 (1903); Makino & Nemoto, Fl. Japan ed. **2**: 174 (1931).

Salix daiseniensis Seemen, Salic. Jap.: 66 (1903), p. min. p., incl. specim. ex Rebunsiri, Faurie 3712. [fide Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **15**: 413 (1940)].

Salix shiraii var. *vulcaniana* H. Lévl. in Bull. Acad. Géog. Bot. **14**: 209 (1904) [**Type**: Japan. Hokkaido, volcan de Tarumai, 17 June 1893. U. Faurie 10026, U. Faurie 10027. (E-syntypes)].

Salix ignicoma H. Lévl. in Bull. Acad. Géog. Bot. **16**: 143 (1906) [**Type**: Japan. Honshu, in sylv. Aomori, May 1904. U. Faurie 5763 (E holo.)].

Salix vulpina var. *coriacea* Koidz. in Bot. Mag. Tokyo **27**: 90 (1913) [**Type**: Japan.

Hokkaido, Prov. Oshima, Hakodateyama. E. Tokubuchi s.n. (fol. & fr.), 26 Jul. 1888 (TI lecto.).]

Salix vulpina var. *subalpina* Koidz. in Bot. Mag. Tokyo **28**: 285 (1914) [**Type**: Japan. Honshu, Yamagata Pref. (Prov. Uzen), Gassan. G. Koidzumi s.n. (fr.), Aug. 1911 (TI holo.)]; Sugimoto, New Keys Jap. Tr.: 106 (1961).

[*Salix alopochroa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 100 (1937), nom. illeg. sine descript.]: Ohwi, Fl. Jap. ed. rev.: 472 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 323, fig. 778 (1979); Kimura in Wild Flow. Jap. Wood. **1**: 45, photo 51, 7–8 (1989); Ohwi & Kitag., New Fl. Jap.: 538 (1992), as “*S. alopechroa*”; Sohma in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **40**: 131 (1993).

Distr.: Japan: Hokkaido and Honshu (Tôhoku and northern Kantô Districts) and South Kuriles.

Putative natural hybrids of *Salix*

H1. *Salix* × *algista* C.K. Schneid. in Sarg., Pl. Wils. **3**: 174 (1916), pro sp. [**Type**: Japan. Prov. Suruga, slopes of Fuji-san, abundant above alt. 300 m. E. H. Wilson 6637 (♀ fl.), 7 May 1914 (TI iso.)]; Kimura in Bot. Mag. Tokyo **42**: 566 (1928), pro sp.; Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix. jessoensis* Seemen subsp. *serissaefolia* (Kimura) H. Ohashi (as *S. serissaefolia* Kimura) × *Salix reinii* Seemen.

H2. *Salix* × *ampherista* C.K. Schneid. in Sarg., Pl. Wils. **3**: 175 (1916) [**Type**: Japan. Hokkaido, Prov. Oshima, Hakodate. U. Faurie 5758 (fr.), 1 Jun. 1904 (A holo.), fide Kimura 1940]; Makino & Nemoto, Fl. Jap. ed. 2, 161 (1931); Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26**: 452 (1934); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **15**: 410, fig. 6, tabs. 15–16 (1940); Ohwi, Fl. Jap.: 404 (1953) & Fl. Jap. ed. Engl.: 367 (1965); Kitam. & Murata, Col.

Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *yamatoensis* Koidz. in Bot. Mag. Tokyo **39**: 2 (1925) [**Type**: Japan. Honshu, Nara Pref. (Prov. Yamato), Mt. Butsuryjigoye (sphalm. Butsuyujigoye), Kongosan. G. Koidzumi s.n. (fol.) [cult. in Horto Bot. Kyoto Univ., Jul. 20, 1928]. (KYO lecto. designated by Kimura 1981)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979).

Salix × *ishikawae* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 100, figs. 3–4, tabs. 5–6 (1937) [**Type**: Japan. Honshu, Hyogo, Prov. Settsu, monte Rokkosan. E. Isikawa 2 (♀ fl.), 23 Apr. 1935 (TUS-K holo.)]; Ohwi, Fl. Jap.: 404 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *asamensis* Sugimoto: Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix udensis* Trautv. & Mey. (as *S. sachalinensis* F. Schmidt) × *S. vulpina* Andersson (or as *S. alopochroa* Kimura).

H3. *Salix* × *arakiana* Koidz. in Acta Phytotax. Geobot. **1**: 176 (1932) [**Type**: Japan. Honshu, Kyoto, Prov. Tanba [Tango], Kasagun, Katomura, Mt. Karasugadake. Y. Araki 36 (ster.), 8 Jun. 1930 (KYO lecto. designated by Kimura 1981, TUS-K isolecto.)].

= *Salix gracilistyla* Miq. × *S. udensis* Trautv. & Mey. (as *S. sachalinensis* F. Schmidt)(?).

H4. *Salix caprea* L. (as *S. bakko* Kimura) × *S. futura* Seemen: Nova Fl. Nasu. 145 (1972) & l. c. Suppl.: 118, fig. 79 (1985); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979).

H5. *Salix* × *cremnophylla* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 97, figs. 1–2, tabs. 3–4 (1937) [**Type**: Japan. Honshu, Kanagawa Pref. (Prov. Sagami), in ripa fl. Sakawagawa, Hukusawamura-Koiti. A. Kimura 2367 (fol.), 16 May 1935 (TUS-K lecto. designated by Kimura 1981)];

Ohwi, Fl. Jap.: 407 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix gracilistyla* Miq. \times *S. japonica* Thunb.

H6. *Salix* \times *eriocataphylla* Kimura in Bot. Mag. Tokyo 40: 7 (1926), pro sp. [Type: Japan. Honshu, Shizuoka, Prov. Suruga, prope Subashiri, pede montis Fujisan. A. Kimura 198 (φ fl.), 12 May 1924 (TI holo; TUS-K iso)]; Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix \times *eriocataphylla* var. *psilocarpa* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 20: 208 (1954) [Type: Japan. Honshu, Yamanashi Pref. (Prov. Kai), Wadatoge, Aikawamura. S. Huno s.n. (φ fl.), 19 Apr. 1936 (TUS-K holo.)].

= *Salix caprea* L. (as *S. bakko* Kimura) \times *S. japonica* Thunb.

H7. *Salix* \times *eriocataphylloides* Kimura in J. Jap. Bot. 60: 269, figs. 1–2 (1985) [Type: Japan. Honshu, Miyagi Pref. Prov. Rikuzen, cult. in Hort. Bot. Fac. Scient. Tohoku Univ. A. Kimura 3284 (φ fl.), 5 Apr. 1961 (TUS-K holo.)].

Salix bakko Kimura \times *S. shiraii* Seemen: Nova Fl. Nasu.: 145 (1972) & l. c. Suppl.: 118, fig. 79 (1985).

= *Salix caprea* L. (as *S. bakko* Kimura) \times *S. shiraii* Seemen.

H8. *Salix* \times *euerata* Kimura in Bot. Mag. Tokyo 59: 81 (1946) [Type: Japan. Hokkaido, Prov. Oshima, Onomura-Kaihotu. A. Kimura 2879 (σ^7 fl.), 10 May 1941 (TUS-K lecto. designated by Kimura 1981)]; Ohwi, Fl. Jap.: 406 (1953) & Fl. Jap. ed. Engl.: 367 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix miyabeana* Seemen subsp. *gilgiana* (Seemen) H. Ohashi (as *S. gilgiana* Seemen) \times *S. udensis* Trautv. & Mey. (as *S. sachalinensis* F. Schmidt).

H9. *Salix futura* Seemen \times *S. udensis*

Trautv. & Mey. (as *S. sachalinensis* F. Schmidt): Nova Fl. Nasu: 118 (1985).

H10. *Salix* \times *gracilistylodes* Kimura in Bot. Mag. Tokyo 40: 8 (1926), pro sp. [Type: Japan. Honshu, Hyogo Pref. (Prov. Settsu), monte Rokkosan. A. Kimura 152 (φ fl.), 27 Apr. 1924 (TI holo., TUS-K. iso.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix \times *gracilistylodes* mstr. *sympolyandra* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 18: 549 (1950) [Type: Japan. Prov. Settsu, in paludibus graminosis montis Rokkosan. A. Kimura 444 (σ^7 fl.), 13 Apr. 1926 (TUS-K)].

= *Salix gracilistyla* Miq. \times *S. vulpina* Andersson.

H11. *Salix* \times *hapala* Kimura in Bot. Mag. Tokyo 59: 82 (1946) [Type: Japan. Hokkaido, Prov. Oshima, Onomura-Kaihotu. A. Kimura 2875 (φ fl.), 10 May 1941 (TUS-K lecto. designated by Kimura 1981)]; Ohwi, Fl. Jap.: 406 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix miyabeana* Seemen subsp. *gilgiana* (Seemen) H. Ohashi (as *S. gilgiana* Seemen) \times *S. integra* Thunb.

H12. *Salix* \times *hatusimae* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 10: 560, figs. 6–8, tab. 9 (1935), as *hatusimai* [Type: Japan. Kyushu, Hukuoka Pref. (Prov. Chikuzen), Takenoshita-Tokozi in vicinia urbis Hukuoka. S. Hatusima s.n. (φ fl.), 2 Aug. 1933 (TUS-K holo.)]; Ohwi, Fl. Jap.: 407 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix gracilistyla* Miq. \times *S. integra* Thunb.

H13. *Salix* \times *hayatana* Kimura in Bot. Mag. Tokyo 42: 572 (1928), pro sp. [Type: Japan. Kyushu, Saga Pref. (Prov. Hizen),

Saga, cult. A. Kimura 1286 (♀ fl.), 30 Mar. 1927 (TI holo., TUS-K iso.); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix eriocarpa* Frach. & Sav. or *S. pierotii* Miq. (as *S. koreensis* Andersson) × *S. gracilistyla* Miq.

H14. *Salix* × *hiraoana* Kimura in Bot. Mag. Tokyo **40**: 9 (1926), pro sp. [**Type**: Japan. Honshu, Hyôgo Pref. (Prov. Settsu), monte Rokkosan. A. Kimura & G. Hirao 138 (♀ fl.), 27 Apr. 1924 (TI holo., TUS-K iso.); Kimura in Bot. Mag. Tokyo **40**: 633 (1926), pro sp.; Kimura in Ishii, Engei Daijiten **6**: 2438 (1956); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *hiraoana* Kimura var. *brachystachys* Kimura in Bot. Mag. Tokyo **40**: 634 (1926) [**Type**: Japan. Honshu, Hyôgo Pref. (Prov. Settsu), monte Rokkosan. A. Kimura 344 (♀ fl.), 15 Apr. 1926 (TI holo., TUS-K iso.)].

Salix × *tsugaluensis* Koidz., Fl. Symb. Or.-Asia.: 33 (1930) [**Type**: Japan. Honshu, Aomori Pref., Hirosaki. U. Faurie 2154, May 1898 (P holo.)]; Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **19**: 187, fig. 1, tabs. 3–4 (1952); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *tsugaluensis* var. *latifolia* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **19**: 189, fig. 2 (1952) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai. A. Kimura 3078 (fol.), 14 Oct. 1949 (TUS-K holo.)].

Salix × *hiraoana* f. *brachystachys* (Kimura) Kimura in Ecol. Rev. **13**: 199 (1953).

Salix × *tsugaluensis* f. *latifolia* (Kimura) Kimura in Ecol. Rev. **13**: 201 (1953).

= *Salix integra* Thunb. × *S. vulpina* Andersson (or *S. alopochroa* Kimura).

H15. *Salix* × *hisauchiana* Koidz. in Bot. Mag. Tokyo **33**: 114 (1919), pro sp. [**Type**: Japan. Honshu, Shizuoka Pref. (Prov.

Suruga), Mt. Fujisan. K. Hisauchi s.n. (♀ fl.), 19 May 1918 (TI holo.)]; Kimura in Bot. Mag. Tokyo **40**: 635 (1926), pro sp.; Kimura in Ishii, Engei Daijiten **6**: 2439 (1956); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix integra* Thunb. × *S. japonica* Thunb.

H16. *Salix* × *ikenoana* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **13**: 71, fig. 1, tabs. 6–7 (1938) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai. A. Kimura 2350 (♂ fl.), 15 Apr. 1937 (TUS-K holo.)]; Kimura in Bot. Mag. Tokyo **40**: 635 (1926); Ohwi, Fl. Jap.: 406 (1953) & Fl. Jap. ed. Engl.: 367 (1965); Kimura in Ishii, Engei Daijiten **6**: 2439 (1956); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *ikenoana* f. *subcordata* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **23**: 17, fig. 1, tab. 1 (1957) [**Type**: Japan. Honshu, Tochigi Pref. (Prov. Shimotsuke), in planitie graminoso-herbosa in Imperiali Praedio Rustico Nasuensi, altitudine circa 680 m s.m. Augustissimus Imperator Japane 4137 (fol.), 3 Sept. 1956 (TUS-K holo.)].

= *Salix integra* Thunb. × *S. udensis* Trautv. & Mey. (as *S. sachalinensis* F.Schmidt).

H17. *Salix integra* Thunb. × *Salix miyabeana* Seemen: Check List Higher Pl. Hokkaido **3**: 19 (1994).

H18. *Salix* × *iwahisana* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 314, fig. 3, tabs. 12–13 (1937) [**Type**: Japan. Hokkaido, Prov. Shiribeshi, ad ripas fl. Hugoppe, in vicino oppidi Yoiti. I. Yamamoto 6641 (♂ fl.), 25 Apr. 1937 (TUS-K holo.)] & **26**: 1, fig. 1, tabs. 1–2 (1960); Ohwi, Fl. Jap.: 405 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542

(1992).

Salix × *iwahisana* var. *psilocarpa* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **26**: 4 (1960) [**Type**: Japan. Hokkaido, Prov. Tokachi, Kawanishimati-Inata, Obihiro. K. Togasi 21 (♀ fl.), 5 Apr. 1959 (TUS-K holo.)].

= *Salix gracilistyla* Miq. × *S. rorida* Lacksch.

H19. *Salix* × *kamikotica* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. Biol. **6**: 194 (1931), pro sp. [**Type**: Japan. Honshu, Nagano Pref. (Prov. Shinano), Kamitoti. A. Kimura 782 (♂ fl.), 16 May 1930 (TUS-K. holo.; iso. TUS, TUS-K)]; Nemoto, Fl. Jap. Suppl.: 109 (1936)

× *Toisochosenia kamikotica* (Kimura) Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **11**: 248, figs. 2–3 (1936); Ohwi, Fl. Jap.: 398 (1953), as “*kamikochica*”, l. c., ed. Engl.: 362 (1965), l. c. ed. rev.: 465 (1965); Sugimoto, New Keys Jap. Tr.: 107 (1961); Hatusima, Nihon-no-jyumoku: 690 (1976); Kitam. & Murata, Col. Illust. Wood. Jap. **2**: 337 (1979); Ohwi & Kitagawa, New Fl. Jap.: 530 (1992), as “*kamikochica*”; Sohma in Sci. Rep. Tohoku Univ. 4th ser. (Biol.) **40**: 137, figs. 296–301 (1993) [pollen].

= *Salix arbutifolia* Pall. (as *Chosenia bracteosa* (Turcz. ex Trautv.) Nakai) × *S. cardiophylla* Trautv. & Mey. var. *urbaniana* (Seemen) Kudo (as *Toisusu urbaniana* (Seemen) Kimura).

H20. *Salix* × *kawamurae* Kimura in J. Jap. Bot. **46**: 303 (1971) [**Type**: Japan. Prov. Shimotuke, Myozintoge, Kurobanemati. A. Kimura 4636 (fol.), 11 Sept. 1970 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 333 (1979).

= *Salix futura* Seemen × *S. gracilistyla* Miq.

H21. *Salix* × *koidzumii* Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26**: 440 (1934) [**Type**: Sachalin. Distr. Toyohara, prope oppid. Toyohara. A. Kimura & S. Sugawara

2282 (♀ fl.), 28 May 1933 (TUS-K iso.)] & in Bot. Mag. Tokyo **59**: 85 (1946); Check List Higher Pl. Hokkaido **3**: 20 (1994).

Salix × *praeagravis* Kimura in J. Jap. Bot. **60**: 225, figs. 1–2 (1985) [**Type**: Japan. Honshu, Tochigi Pref. (Prov. Shimotsuke), prope fontem calidum Asahionsen, Nasu. A. Kimura 4639 (fol.), 13 Sept. 1970 (TUS-K holo.)].

= *Salix caprea* L. (as *S. bakko* Kimura or *S. hultenii* Flod. var. *angustifolia* Kimura) × *S. udensis* Trautv. & Mey. (as *S. schalinensis* F. Schmid).

Distributed in Japan: Rishiri and Rebun Islands in Hokkaido.

H22. *Salix* × *koiei* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **15**: 407, fig. 4, tabs. 13–14 (1940) [**Type**: Japan. Honshu, Akita Pref. (Prov. Ugo), Huzikotomura. G. Koie 34 (♂ fl.), 21 Apr. 1940 (TUS-K lecto. designated by Kimura 1981)]; Ohwi, Fl. Jap.: 407 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix gracilistyla* Miq. × *S. miyabeana* Seemen subsp. *gilgiana* (Seemen) H. Ohashi (as *S. gilgiana* Seemen).

H23. *Salix* × *lasiogyne* Seemen, Salic. Jap.: 32, tab. 4, figs. A–C (1903), pro sp., excl. specim. ex Korea [**Type**: Japan. Kanagawa Pref. (Prov. Sagami), Yamakita. U. Faurie 3702 (♀), 8 May 1899 (KYO lecto. designated by Kimura 1984)]; Koidz. in Bot. Mag. Tokyo **27**: 265 (1913); Kimura in J. Jap. Bot. **59**: 271 (1984).

= *Salix babylonica* L. × *S. jessoensis* Seemen subsp. *serissaefolia* (Kimura) H. Ohashi (as *S. serissaefolia* Kimura).

H23-1. *Salix* × *lasiogyne* nothosubsp. **lasiogyne**

H23-2. *Salix* × *lasiogyne* nothosubsp. **yuhkii** (Kimura) H. Ohashi, comb. nov.

Salix × *yuhkii* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **18**: 544, fig. 1 (1950) [**Type**: Japan. Honshu, Yamagata

Pref. (Prov. Uzen), Yonezawa, cult. A. Kimura 3046 (♀ fl.), 24 Apr. 1950 (TUS-K lecto. designated by Kimura 1981)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix babylonica* L. (as *S. babylonica* var. *lavalleyi* Dode) (cult.) × *S. jessoensis* Seemen subsp. *jessoensis* (as *S. hondoensis* Koidz.).

H24. ***Salix* × *leucopithecia*** Kimura in Bot. Mag. Tokyo 40: 11 (1926), pro sp. [Type: Japan. Honshu, Tokyo Pref. (Prov. Musashi), in sepulcris Somei, prope Tokyo. A. Kimura 59 (♂ fl.), 28 Mar. 1924 (TI holo.)]; Ohwi, Fl. Jap.: 403 (1953) & Fl. Jap. ed. Engl.: 365 (1965); Kimura in Ishii, Engei Daijiten 6: 2438 (1956); Sugaya in Terasaki. Illust.: 101, fig. 391 (1977); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 333 (1979); Kimura in Wild Flow. Jap. Wood. 1: 50, photo 57, 6–7 (1989); Makino, New Illust. Fl. Jap. rev. ed.: fig. 98 (1989); Kimura in J. Jap. Bot. 59: 353 (1984); Nova Fl. Nasu Suppl.: 117, figs. 76–78 (1985); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *yoitiana* Kimura in Bot. Mag. Tokyo 59: 83 (1946) [Type: Japan. Hokkaido, Prov. Shiribeshi, in ripa fl. Hugoppe, prope Yoiti, I. Yamamoto 8167 (♀ fl.), 22 Apr. 1938 (TUS-K lecto. designated by Kimura 1981)]; Ohwi, Fl. Jap.: 403 (1953) & Fl. Jap. ed. Engl.: 366 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix caprea* L. (as *S. bakko* Kimura or *S. hultenii* Flod. var. *angustifolia* Kimura) × *S. gracilistyla* Miq.

H25. ***Salix* × *matsumurae*** Seemen, Salic. Jap.: 71, tab. 18 A–B' (1903), pro sp., ut "*matsumuraei*" [Type: Japan. Honshu, Mt. Shimizutoge, inter Gumma Pref. et Niigata Pref. J. Matsumura 20 (fr.), 19 Jul. 1886 (TI isolecoto. designated by Kimura 1981)]; Schneider in Sargent, Pl. Wilson. 3: 131

(1916); Nova Fl. Nasu.: 145 (1972).

Salix futura Seemen × *S. vulpina* Andersson: Nova Fl. Nasu.: 145 (1972); Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 334 (1979).

= *Salix futura* Seemen × *S. vulpina* Andersson.

Kimura (1981) commented on two syntypes of *S. matsumurae* as follows: "Adnotatio: ut ex explicatione Seemenii (l.c. p. 72) facile videtur, specimina Wrightii (No. 901, 212–441, Herb. Lugd. Bat.) ex Simoda verisimiliter ad *Salicem japonicam* Thunb. s.l. sunt referenda, quamquam C. K. Schneider (l.c. p. 132) haec pro typo habet. Specimen autem Matsumurai n. 20 ex Shimizutoge cum figuris Seemenii (tab. 18, figs. A–BI) maxime congruit; itaque hoc pro isolecototypo habeo."

H26. ***Salix* × *microstemon*** Kimura in Bot. Mag. Tokyo 40: 636 (1926), pro sp. [Type: Japan. Honshu, Okayama Pref. (Prov. Bizen), ad ripas fluminis Yoshiigawa, prope Wake. A. Kimura 461 (♂ fl.), 20 Apr. 1926 (TI holo., TUS-iso.)]; Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix eriocarpa* Frach. & Sav. × *S. miyabeana* Seemen subsp. *gilgiana* (Seemen) H. Ohashi.

H27. ***Salix* × *nasuensis*** Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) 28: 37, fig. 1, tabs. 1–5 (1962) [Type: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura 3295 (♀ fl.), 6 Apr. 1961 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. 2: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix futura* Seemen × *S. shiraii* Seemen.

Original collection: "Prov. Shimotsuke: ad saxa, prope fontem calidum Kitaonsen, in Imperiali Praedio Rustico Nasuensi, A. Kimura 3307, 14 May 1959."

H28. ***Salix* × *pedionoma*** Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) 10: 558, fig. 5 A–D, tab. 18-1 (1935) [Type:

Sakhalin. Distr. Toyohara, prope oppidum Toyohara. S. Sugawara 1 (♀ fl.), 18 May 1934 (TUS-K holo.); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix caprea* L. (as *S. hultenii* Flod. var. *angustifolium* Kimura) × *S. schwerinii* E. Wolf (as *S. yezoensis* (C.K.Schneid.) Kimura).

Distributed in South Sakhalin and Hokkaido.

H29. *Salix* × *pseudopaludicola* Kimura in J. Fac. Agr. Hokkaido Imp. Univ. **26** (4): 445 (1934) [**Type**: Japan. Hokkaido, Prov. Ishikari, Takanegahara, in montibus Nutakkamushupe. A. Kimura 1797 (♀ fl.), 13 Jul. 1928 (TUS-K holo.); Ohwi, Fl. Jap.: 404 (1953) & Fl. Jap. ed. Engl.: 366 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix fuscescens* Andersson (as *S. paludicola* Koidz.) × *S. reinii* Seemen (as *S. hidewoi* Koidz.).

H30. *Salix* × *sendaica* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **6**: 196 (1931) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), colle Mukaiyama (sphalm. Mukoyama), Sendai. A. Kimura 809 (♀ fl.), 28 Apr. 1929 (TUS-K holo.); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **18**: 552 (1950); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

Salix × *ultima* Koidz. in Acta Phytotax. Geobot. **8**: 111 (1939) [**Type**: Japan. Honshu, Nara Pref. (Prov. Yamato), Mt. Kongosan. G. Koidzumi s.n. (fol.), Jul. 24, 1930 (KYO lecto. designated by Kimura 1981)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979).

= *Salix caprea* L. (as *S. bakko* Kimura) × *S. vulpina* Andersson (or as *S. alopochroa* Kimura).

H31. *Salix* × *sigemitui* Kimura in J. Jap. Bot. **51**: 1, fig. 1 (1976) [**Type**: Japan. Honshu, Prov. Kôzuke, secus torrentem

Yubisogawa, Yubiso, altitudine circa 560 m s.m. A. Kimura & S. Hukao 4674 (fol. adult.), 2 Oct. 1973 (TUS-K holo.)].

= *Salix gracilistyla* Miq. × *S. hukaoana* Kimura.

H32. *Salix* × *sirakawensis* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 102, fig. 5, tabs. 7–8 (1937), as × *Salix sirakawensis* [**Type**: Japan. Honshu, Fukushima Pref. (Prov. Iwaki), Kosekimura. A. Kimura 875 (♂ fl.), 23 Apr. 1934 (TUS-K holo.)]; Ohwi, Fl. Jap.: 404 (1953) & Fl. Jap. ed. Engl.: 366 (1965); Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **23**: 7, fig. 1, tabs. 1–2 (1957); Kitamura & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992), as “*shirakawaensis*”.

Salix × *sirakawensis* f. *pubescens* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **12**: 103 (1937) [**Type**: Japan. Honshu, Nagano Pref. (Prov. Shinano), Nojiri. K. Hisauchi 1722 (fol.), 12 Aug. 1936 (TUS-K holo.)], syn. nov.

= *Salix futura* Seemen × *S. integra* Thunb.

H33. *Salix* × *sugayana* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **20**: 202, figs. 1–3, tabs. 1–4 (1954) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), Sendai, cult. A. Kimura 3113 (♂ fl.), 8 Apr. 1953 (TUS-K lecto. designated by Kimura 1981)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979).

Salix × *sugayana* mstr. *ternata* Kimura in Sci. Rep. Tohoku Univ. 4 ser. (Biol.) **20**: 206, fig. 4 (1954) [**Type**: Japan. Iwate Pref. (Prov. Rikutyu), secus fl. Sekigutigawa in viculo Sekiya prope oppidulum Yamada. S. Sasamura 1188 (fr.), 10 July 1949 (TUS-K)].

= *Salix integra* Thunb. × *S. rupifraga* Koidz.

Originally found in “Prov. Shinano: inter saxa in ripis torrentis Azusagawa, prope fontem calidum Sakamakionsen (collected by A. Kimura and S. Sugaya on 14 May

1950)".

H34. *Salix* × *sumiyosensis* Kimura in Bot. Mag. Tokyo **40**: 12 (1926) [**Type**: Japan. Honshu, Hyogo Pref. (Prov. Settsu), colle Kamokogahara (errore Osigaoka) in Sumiyoshi-mura. A. Kimura 228 (♀ fl.), 11 Apr. 1925 (TI holo., TUS-K iso.)]; Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix gracilistyla* Miq. × *S. yoshinoi* Koidz.(?).

H35. *Salix* × *thaymasta* Kimura in Bot. Mag. Tokyo **40**: 641 (1926) [**Type**: Japan. Honshu, Hyôgo Pref. (Prov. Settsu), monte Rokkusan. E. Ishikawa s.n. (♂ fl.), 8 Apr. 1940 (TUS-K holo.)]; Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **15**: 409, fig. 5 (1940) & in Bot. Mag. Tokyo **59**: 84 (1946), ut *thaumasta*; Ohwi, Fl. Jap.: 405 (1953) & Fl. Jap. ed. Engl.: 367 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 333 (1979); Nova Fl. Nasu. Suppl.: 117, figs. 73–75 (1985); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix gracilistyla* Miq. × *Salix schwerinii* E. Wolf (as *S. kinuyanagi* Kimura).

H36. *Salix* × *turumatii* Kimura in Sci. Rep. Tohoku Imp. Univ. 4 ser. (Biol.) **11**: 243, fig. 1. tabs. 7–8 (1936) [**Type**: Japan. Honshu, Ibaraki Pref. (Prov. Hitati), Midorigaokamura. H. Turumati s.n. (♂ fl.), 29 Mar. 1935 (TUS-K)] & l. c. **12**: 107 (1937); Ohwi, Fl. Jap.: 407 (1953) & Fl. Jap. ed. Engl.: 368 (1965); Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 333 (1979); Ohwi & Kitag., New Fl. Jap.: 542 (1992).

= *Salix caprea* L. (as *S. bakko* Kimura) × *S. futura* Seemen × *S. gracilistyla* Miq.

H37. **Salix* × *japopina* Kimura in J. Jap. Bot. **43**: 90, fig. 1 (1968) [**Type**: Japan. Honshu, Miyagi Pref. (Prov. Rikuzen), in horto Inst. Biol. Tohoku Univ., Sendai. A. Kimura 3341 (fol.), 11 Sept. 1967 (TUS-K holo.)]; Kitam. & Murata, Col. Illust. Woody Pl. Jap. **2**: 334 (1979); Ohwi &

Kitag., New Fl. Jap.: 542 (1992), as *S. Kimura*.

= **Salix japonica* Thunb. (cult.) × *S. vulpina* Andersson.

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大橋広好：日本産ヤナギ属植物集覧

日本産ヤナギ属、ケショウヤナギ属およびオオバヤナギ属の分類と学名および分類体系を再検討した。本研究では、これら3属をヤナギ属にまとめた。日本産種としておよそ40種が知られていたが、31種4亜種3変種16品種に整理した。この中にはシダレヤナギ、ウンリウヤナギ、コリヤナギなど3種2品種の外来種が含まれているので、日本の在来種は28種4亜種3変種14品種となった

(栽培品種1変種1品種を含む)。これらの日本産種を新たに1属4亜属17節に分類した。各分類群について、正名、シノニム、それらの文献をあげ、種以下には分布域を加えた。学名の多くについてはタイプを併記した。なお、各分類群の区別、記載などはIwatsuki et al. (eds.): Flora of JapanのSalicaceaeに記述したので、ここに省略した。また、ヤナギ科と主な種については朝日百科・植物の世

界 6: 226–523 (1995) に解説した。雑種については、37雑種を認め、各学名について出典、タイプ、文献を整理し、推定両親種の雑種式 hybrid formula を示した。

ヤナギ属の分類体系は Andersson (1868) の体系以外には世界の全種類を基礎として設立されたものがなく、その後の研究は全て地域的な種類に基づく体系である。しかし、旧ソ連のヤナギ属をまとめた Skvortsov (1968a, 1968b) と北アメリカの Argus (1988, 1997) の研究が今日のヤナギ属分類体系の基礎となっている。本論文では基本的にこれらの体系と一致するように日本の種類の分類体系をまとめたが、冬芽鱗片のへりが離生している群は独立群と考え、トカチヤナギ亜属 subgen. *Urbanianae* (Seemen) H. Ohashi とした。

今回の研究によって使い慣れた学名を変更したものもあるので、本文中に学名と和名の対照リストを示した。例えば、ケショウヤナギ、オオバヤナギは属の変更に伴う変更、タチヤナギ、オノエヤナギ、キヌヤナギ(エゾノキヌヤナギを含む)、バッコヤナギ(マルバノバッコヤナギを含む)などは種を大きく範囲づけたための変更、カワヤナギはエゾノカワヤナギの亜種としたための変更などである。また、ミネヤナギの著者は Franchet & Savatier ではなく、Seemen であるとした。

日本産ヤナギ属、ケショウヤナギ属、オオバヤナギ属は大井 (1953, 1965a, 1965b)、北村・村田 (1979)、木村 (1989)、あるいは大井・北川 (1992) によって、詳しく記述されている。しかし、これらの著作は日本フロラの一部としてこれらの属をまとめたものであり、属、種の同定を目的としているため、検索表、記載、分布などの記述が主であり、属内分類群、個々の分類群の学名の出典と研究論文、タイプ標本などについての研究結果は省略されている。

分類学の研究の中でも分類群の研究はこれまでに行われた研究の結果を基礎として新しい成果を付け加えてゆくことが特に必要である。分類学では学名を基準としてその分類群についてこれまで何が研究されてきたのかを一覧で示すことのできる発表の形式も確立されている。学名は「その群を引用することの手段を与えること」(国際植物命名規約前文)が基本的な機能の一つである。ある分類

群について、その「学名+出典(+タイプ標本)+文献引用; +シノニム」という形の表示方法は古くから続いている分類学に特有のものである。この形式によって、積み重ねてきた成果を含む文献を学名の下に引用し、その分類群についての情報を整理して、過去の研究とのつながりを明らかにしてきた。引用文献の取舍選択によってその研究者の当該分類群にたいする見解を同時に示すこともできる。

このような、いわゆる「集覧」Systematic Enumeration は分類群の研究にとって最も基本的な研究成果であるといえよう。日本産種子植物に関しては、そのおよそ半分の科について、含まれる属、種、種内分類群の全てを扱った原寛：日本種子植物集覧 1–3 があり、今日でも非常に有用である。シダ植物では田川基二：Index Pteridophytorum Japonicarum (原色日本羊歯植物図鑑) と中池敏之：Enumeratio Pteridophytorum Japonicarum, Filicales がある。

日本のヤナギ科は原先生の集覧に含まれておらず、それに代わるものもない。ヤナギ属の研究を始めるにあたって、Seemen (1903): *Salices Japonicae* から後の学名と過去の研究を整理することがまず必要であった。日本のヤナギ属は木村有香先生が最近まで長い間研究を続けておられ、その成果を主として東北(帝国)大学理科報告と本誌に発表してこられた。このため、ヤナギ属(広義)の学名や論文などを探し出し易かった。また、日本産ヤナギ属の多くのタイプ標本が東北大学大学院理学研究科生物学教室植物標本館木村ヤナギ科標本室(TUS-K)にあるので、学名と実物の対応も容易に検討できた。しかし、本研究では Andersson, Blume, Miquel, Seemen, Franchet & Savatier, Schneiderなどの学名のタイプについては一部を検討したに過ぎない。Leiden と Kew でも、Blume, Miquel のタイプは見つからないものが多い。

属内分類群と各学名のタイプ標本を加えたことは異なっているが、本論文は原先生の日本種子植物集覧を補充するつもりで用意したので、和文の表題をヤナギ属植物集覧とした。不十分な点が多いが、今後改訂してより完全なものにしていきたいと考えている。

和名と学名の対照表は以下の通りである。

アカゲオオキツネヤナギ	<i>Salix futura</i> Seemen f. <i>rufa</i> (Kimura) H. Ohashi
イケノヤナギ	<i>Salix</i> × <i>ikenoana</i> Kimura
イヌコリヤナギ	<i>Salix integra</i> Thunb. f. <i>integra</i>
イヌコリヤナギ×エゾノカワヤナギ	<i>Salix integra</i> Thunb. × <i>S. miyabeana</i> Seemen

- イヌマルバヤナギ *Salix nakamura* Koidz. subsp. *yezoalpina* (Koidz.) H.Ohashi
f. *neoreticulata* (Nakai) H.Ohashi
- イワヒサヤナギ *Salix* × *iwahisana* Kimura
- ウンリュウヤナギ *Salix matsudana* Koidz. var. *tortuosa* Vilm.
- エゾタカネヤナギ *Salix nakamura* Koidz. subsp. *yezoalpina* (Koidz.) H.Ohashi
f. *yezoalpina* (Koidz.) H.Ohashi
- エゾノカワヤナギ *Salix miyabeana* Seemen subsp. *miyabeana*
- エゾマメヤナギ *Salix nummularia* Andersson f. *nummularia*
- エゾヤナギ *Salix rorida* Lacksch. f. *rorida*
- オオキツネヤナギ *Salix futura* Seemen f. *futura*
- オオキツネヤナギ × オノエヤナギ *Salix futura* Seemen × *S. udensis* Trautv. & Mey.
- オオタチヤナギ *Salix pierotii* Miq. f. *pierotii*
- オオバヤナギ *Salix cardiophylla* Trautv. & Mey. var. *urbaniana* (Seemen) Kudo
- オオミヤマヤナギ *Salix* × *psudopaludicola* Kimura
- オクヤマサルコ *Salix* × *matsumurae* Seemen
- オノエヤナギ *Salix udensis* Trautv. & Mey.
- カミコウチヤナギ *Salix* × *kamikotica* Kimura
- カワイヌコリヤナギ *Salix* × *hapala* Kimura
- カワオノエヤナギ *Salix* × *euerata* Kimura
- カワヤナギ *Salix miyabeana* Seemen subsp. *gilgiana* (Seemen) H.Ohashi
f. *gilgiana* (Seemen) H.Ohashi
- キツネヤナギ *Salix vulpina* Andersson
- キヌゲエゾマメヤナギ *Salix nummularia* Andersson f. *hebecarpa* (Kimura) H.Ohashi
- キヌヤナギ *Salix schwerinii* E. Wolf
- クロヤナギ *Salix gracilistyla* Miq. var. *melanostachys* (Makino) C.K.Schneid.
- ケコマイワヤナギ *Salix rupifraga* Koidz. f. *eriocarpa* (Kimura) Kimura ex H.Ohashi
- ケショウヤナギ *Salix arbutifolia* Pall.
- ケタカネイワヤナギ *Salix nakamura* Koidz. subsp. *nakamura*
f. *eriocarpa* (Kimura) T.Shimizu
- コイエヤナギ *Salix* × *koiei* Kimura
- コエゾヤナギ *Salix rorida* Lacksch. f. *roridaeformis* (Nakai) Kimura ex H.Ohashi
- コガネヤナギ *Salix pierotii* Miq. f. *auricoma* Kimura
- コゴメヤナギ *Salix jessoensis* Seemen subsp. *serissaefolia* (Kimura) H.Ohashi
- コセキヤナギ *Salix* × *sirakawensis* Kimura
- コマイワヤナギ *Salix rupifraga* Koidz. f. *rupifraga*
- コリヤナギ *Salix koriyanagi* Kimura ex Goerz
- シグレヤナギ *Salix* × *eriocataphylla* Kimura
- シダレイヌコリヤナギ *Salix integra* Thunb. f. *pendula* Kimura
- シダレエゾヤナギ *Salix rorida* Lacksch. f. *pendula* Kimura
- シダレカワヤナギ *Salix miyabeana* Seemen subsp. *gilgiana* (Seemen) H.Ohashi
f. *pendula* (Kimura) H.Ohashi
- シダレネコヤナギ *Salix gracilistyla* Miq. var. *gracilistyla* f. *pendula* (Kimura) H.Ohashi
- シダレミネヤナギ *Salix reinii* Seemen f. *pendula* Kimura
- シダレヤナギ *Salix babylonica* L. f. *babylonica*
- シバキツネヤナギ *Salix* × *japopina* Kimura
- シバヤナギ *Salix japonica* Thunb.
- ジャヤナギ *Salix eriocarpa* Franch. & Sav.
- シライヤナギ *Salix shiraii* Seemen
- シロシダレヤナギ *Salix* × *lasiogyne* Seemen nothosubsp. *lasiogyne*

シロヤナギ	<i>Salix jessoensis</i> Seemen subsp. <i>jessoensis</i>
スガヤナギ	<i>Salix</i> × <i>sugayana</i> Kimura
スミヨシヤナギ	<i>Salix</i> × <i>sumiyosensis</i> Kimura
セイコヤナギ	<i>Salix babylonica</i> L. f. <i>seiko</i> Kimura
センダイヤナギ	<i>Salix</i> × <i>sendaica</i> Kimura
タカネイワヤナギ	<i>Salix nakamurana</i> Koidz. subsp. <i>nakamurana</i> f. <i>nakamurana</i>
タチネコヤナギ	<i>Salix gracilistyla</i> Miq. var. <i>gracilistyla</i> f. <i>adscendens</i> (Kimura) H. Ohashi
タチヤナギ	<i>Salix triandra</i> L.
トライカヤナギ	<i>Salix taraikensis</i> Kimura
チクゼンヤナギ	<i>Salix</i> × <i>hatusimai</i> Kimura
リュウゾウジヤナギ	<i>Salix</i> × <i>hayatana</i> Kimura
チョウセンネコヤナギ	<i>Salix gracilistyla</i> Miq. var. <i>graciliglans</i> (Nakai) H. Ohashi
トウゲヤナギ	<i>Salix</i> × <i>algista</i> Schneid.
トカチヤナギ	<i>Salix cardiophylla</i> Trautv. & Mey. var. <i>cardiophylla</i>
トヨハラヤナギ	<i>Salix</i> × <i>koidzumii</i> Kimura
ナガバノネコヤナギ	<i>Salix</i> × <i>arakiana</i> Koidz.
ナスノイワヤナギ	<i>Salix</i> × <i>nasuensis</i> Kimura
ナスノシグレヤナギ	<i>Salix</i> × <i>eriocataphylloides</i> Kimura
ネコシバヤナギ	<i>Salix</i> × <i>cremnophylla</i> Kimura
ネコヤナギ	<i>Salix gracilistyla</i> Miq. var. <i>gracilistyla</i> f. <i>gracilistyla</i>
ノヤナギ	<i>Salix subopposita</i> Miq.
ハコダテヤナギ	<i>Salix</i> × <i>ampherista</i> Schneid.
バツコキヌヤナギ	<i>Salix</i> × <i>pedionoma</i> Kimura
バツコヤナギ	<i>Salix caprea</i> L.
バツコヤナギ × オオキツネヤナギ	<i>Salix caprea</i> L. × <i>S. futura</i> Seemen
ヒダカミネヤナギ	<i>Salix nakamurana</i> Koidz. subsp. <i>kurilensis</i> (Koidz.) H. Ohashi
ヒタチヤナギ	<i>Salix</i> × <i>turumatii</i> Kimura
ヒラオヤナギ	<i>Salix</i> × <i>hiraoana</i> Kimura
フイリネコヤナギ	<i>Salix gracilistyla</i> Miq. var. <i>gracilistyla</i> f. <i>variegata</i> (Kimura) Kimura
フカオヤナギ	<i>Salix</i> × <i>sigemitui</i> Kimura
フジヤナギ	<i>Salix</i> × <i>hisauchiana</i> Koidz.
フリソデヤナギ	<i>Salix</i> × <i>leucopithecia</i> Kimura
マルバヤナギ	<i>Salix chaenomeloides</i> Kimura
ミネヤナギ	<i>Salix reinii</i> Seemen f. <i>reinii</i>
ミヤコヤナギ	<i>Salix</i> × <i>thaymasta</i> Kimura
ミヤマヤチヤナギ	<i>Salix fuscescens</i> Andersson
ミョウジンヤナギ	<i>Salix</i> × <i>kawamurae</i> Kimura
ヤマヤナギ	<i>Salix sieboldiana</i> Blume
ユウキシダレ	<i>Salix</i> × <i>lasiogyne</i> nothosubsp. <i>yuhkii</i> (Kimura) H. Ohashi
ユビソヤナギ	<i>Salix hukaoana</i> Kimura
ヨシノヤナギ	<i>Salix yoshinoi</i> Koidz.
ロツカクヤナギ	<i>Salix babylonica</i> L. f. <i>rokkaku</i> Kimura
ロツコウヤナギ	<i>Salix</i> × <i>gracilistyloloides</i> Kimura
ワケノカワヤナギ	<i>Salix</i> × <i>microstemon</i> Kimura

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